AUTHOR INDEX TO PAPERS PRESENTED AT THE 69TH MEETING OF THE ACOUSTICAL SOCIETY OF AMERICA

Alford, B.—N12
Alluisi, E. A.—N9
Angona, F. A.—BB9
Ashley, C. M.—J10
Atal, B. S.—J5

Backus, J.—S9
Baker, D. M.—W7
Banta, E. D.—G2
Barger, J. E.—D6
Barham, E. G.—L10
Barrett, R. E.—O10
Bastian, J.—CC3
Batzler, W. E.—L10
Bauer, B. B.—H9, X9, X10
Beard, R. B.—O11
Beavers, R. R.—D5
Becker, C. J.—H5
Becker, R. W.—Y9
Beguin, F. P.—B1
Belar, H.—Q4
Belford, J. F.—R2
Beranek, L. L.—E2
Bhimani, B. V.—Y1, Y2
Bien, A.—B3
Bishop, D. E.—B10
Bockemohle, L. P.—H11
Boner, C. R.—J8
Bourbon, W. T.—F9
Bow, Y. F.—G1
Bowman, H. S.—W6
Bozich, D. J.—P6
Brady, P. T.—I2
Brandt, J. F.—N10
Brasch, J. K.—P9
Braungart, D. C.—O5
Breazeale, M. A.—G5
Bricker, P. D.—I1
Buining, E.—F7
Buratti, R. J.—Z3
Burgin, G.—C3

Campanella, S. J.—CC4
Campbell, R. A.—F12
Carbonell, J. R.—BB3, G11, G12, U8, Y5
Carhart, R.—U3
Carnevale, E. H.—T2
Chanaud, R. C.—P3
Chandler, J.—F3, F4
Chaney, R. B., Jr.—U6
Chapman, W. D.—Y6
Chertock, G.—Z6
Christensen, A.—H8
Christian, E. A.—G10
Christoff, J. P.—J6, J7, S3
Chuongvan, C.—O6
Claes, H. P.—O6
Clarke, F. R.—U7, Y8
Clay, C. S.—CC12, L6
Coats, A.—N12
Cohen, M. F.—U10, U11
Cohen, M. G.—T5, T6
Cook, R. K.—W7
Corliss, E. L. R.—B4, B5
Coulter, D. C.—CC4
Cox, H.—H10
Creelman, C. D.—B8, S10
Cretella, J. P.—Z2, Z3
Cron, B. F.—H5
Cuddy, L. L.—N3
Curtis, J. C.—O8

Dahlke, H. E.—X3
Dallos, P. J.—R7
Damianopoulos, E. N.—F7
Dardy, H. D.—AA3
Deatherage, B. H.—F11
Dence, D. F.—H3
Dew, D.—CC2
Diercks, K. J.—C6
Dietrich, C. W.—V4
DiNapoli, F. R.—CC9
Dirks, D. D.—F3, F4
Doelle, L. L.—S5
Dranetz, A. I.—D1
Dunn, F.—O2, O3
Dyer, H. J.—O7
Dyer, I.—G11, G12, K3

Earl, L.—Y1
Edge, P. M., Jr.—K4
Edmonds, P. D.—O4
Egan, J. P.—F10
Eldred, K. McK.—K1
Eldredge, D. H.—R6
Eller, A. E.—G8
Elliott, D. N.—N8, U2
Elliott, L. L.—F6
Epstein, D.—G9
Evans, W. O.—N9

Feith, K. E.—CC8
Fiala, W. T.—D4
Figwer, J. J.—S6
Finck, A.—R5
Fitzroy, D.—S2
Flynn, H. G.—G7, G8
French, B.—N12
Fujita, S.—U2

Galloway, W. J.—P10
Gannon, R. P.—R9
Gauster, W. B.—G5
Gerber, S. E.—B3
Glackin, R.—U1
Glantz, J.—F7
Glorig, A.—E3
Goerke, Y. H.—W4
Gold, B.—Q1
Goodfriend, L. S.—A2
Gordon, C.—BB6
Gordon, E. I.—T5, T6
Green, C. E.—X5
Green, D. M.—F8
Greene, G. E.—W4, W5
Grignetti, M. C.—Y5
Grosso, M.—Z6
Guinan, J. J., Jr.—R8

Hafter, E. R.—F11
Hanes, G. R.—T4
Harbold, M. L.—H6, Z4
Hargrove, L. E.—G6
Harris, A. S.—P8
Harris, G. C.—R11
Harrison, M.—C8, P4
Hartog, J. J.—H7
Hawkes, G. R.—N9
Hawley, S. A.—O3
Heimann, J. H.—C1
Helms, S. W.—Q2
Hemond, C.—P1
Henderson, D.—F11
Henning, G. B.—N1
Herzfeld, K. F.—T1
Hickling, R.—C6
Hiedemann, E. A.—G1
Hill, D. R.—Y7
Hill, R. F.—L9
Hilliard, J. K.—D4
Himelblau, H.—H11
Hodge, D. C.—N13
Hoffman, R. D.—BB2
Hogue, V. D.—Q3
Hollien, H.—CC1
Hruska, G. R.—Z10
Hughes, D. E.—O1
Humphreys, H. R.—M3
Hunter, J. L.—AA3
Hutchins, C. M.—S8

Ingard, U.—W1
Ingenito, F.—G3

Jackopin, L.—AA1
James, R. R.—V6
Janssen, J. H.—K5
Jeffress, L. A.—F9
Jerger, J.—N12, U5
Junger, M. C.—H1
Jurenko, D. M.—Q6

Kalnins, A.—C4
Kammer, E. W.—D2
Kanabis, W. G.—L2
Karamargin, M. C.—L1
Kendig, P. M.—D8
Kersta, L. G.—CC5
Kerwin, E. M., Jr.—BB3, Z7
Kessler, L. W.—O3
Kingsley, B.—R1
Klein, W. R.—T7
Knollman, G. C.—H7
Knudsen, V. O.—S3
Kolsky, H.—C1, V2
Konishi, T.—R10
Kraus, H.—C5
Kryter, K. D.—B9

Lamb, J.—AA7
Langford, T. L.—R3
Laver, J. D. M.—I4
Lawrence, W.—I4, I5
Lazan, B. J.—V3

LeBlanc, L. R.—L9
Lee, K. P.—AA4
Leonard, R. W.—S3
Lepor, M.—P5
Levitt, H.—N4
Lewis, J. W. L.—AA4
Li, K.-P.—Y6
Liang, W. L.—L6
Lieberman, P.—I3
Lightner, G. S., IV—Z1
Likoff, W.—R1
Liljencrants, J.—I8
Lindner, W. A.—F10
Linnell, C. O.—R7
Little, J.—J7
Loeb, M.—N9
Lubman, D.—X6
Lyon, R. H.—BB6

McCormick, M. E.—P4
MacDonald, R. B.—L2
McFadden, D.—F10
Majerus, D.—N2
Maling, G. C., Jr.—P2
Malme, C. I.—G11, G12
Mann, M.—J6
Marseillan, R. F.—R4
Marshall, P.—BB1
Martin, J. J.—L4
Mayes, W. H.—K4
Mermelstein, P.—I7
Metherell, A. F.—V3
Meyer, E.—M2
Meyer, M. F.—S11
Meyerhoff, W. K.—K7
Michaels, S. B.—I3
Mickunas, j., Jr.—Q8, U10
Middleton, F. H.—CC9
Miller, J. F.—U10, Y10
Milne, D. C.—R11
Mitchell, D. D.—CC13
Mitchell, R.—Y1
Mohammed, A.—WS1
Mol, H.—I6
Moore, P.—CC2
Morse, B.—J7
Moscovitch, D. H.—R9
Moseley, D. S.—X1
Moushegian, G.—R3
Mulligan, B. E.—F1
Mundie, J. R.—R4
Muster, D.—H8

Neubert, V. H.—BB8
Newman, J. N.—Z5
Newton, T. J.—E4
Nielson, R. J.—L1
Northwood, T. D.—J3
Nyborg, W. L.—AA6, O6

Ogilvie, T. F.—K6
Oliphant, K. S.—J1
Olsen, W.—U4
Olson, H. F.—M4, Q4
Olynyk, D.—J3
Ortega, J. C.—J7

Papadakis, E. P.—C7
Parke, N. G.—Z8
Parkin, P. H.—M3
Parsons, J. S.—BB7
Parvulescu, A.—CC11, CC12, CC13
Peake, W. T.—R8
Pearsons, K. S.—B9
Pedersen, P.—S10
Penzes, L. E.—C3
Pernet, D. F.—Z10
Peterson, R. H.—P7
Petraitis, R.—R11
Peverly, R.—K2
Pfafflin, S. M.—N6
Pierce, A. D.—W3
Piercy, J. E.—AA2, T4
Pietrasanta, A. C.—A5
Plutchok, R.—C8
Porter, D. T.—H2
Potter, S. M.—E4
Prestigiacomo, A. J.—X11
Proctor, T. M., Jr.—AA5
Purcell, J. B. C.—S1
Pyle, R. W.—D9

Rader, C. M.—Q5
Raelson, V. J.—C2
Rao, M. G. S.—AA2
Rathbun, H., Jr.—D1
Reger, S. N.—N2
Remillard, W. J.—CC7
Rengman, U.—I8
Renkus, J. A.—D4
Riach, W. D.—N8, U9
Ribner, H. S.—A1
Rogers, E. S.—Q4
Rosett, T.—O9
Rowe, W. E.—AA6
Ruben, R. J.—U1
Rudmose, W.—A4
Rupert, A.—R3

Sachs, T. D.—X2
Sanders, D. R.—D7
Sanders, G. J.—E1
Schiller, E.—X8
Schloss, F.—BB5
Schnitzler, R. M.—CC6
Schoeffler, M. S.—N5
Schroeder, M. R.—I7, J4, J5, M1
Schultz, T. J.—J2, S6
Segal, B. L.—R1
Sepmeyer, L. W.—J1
Seshagivi Rao, M. G.—AA2
Sessler, G. M.—J5, W2, X7
Shaw, E. A. G.—B2
Sherman, C. H.—Z8
Shields, F. D.—AA4
Simmons, J. W.—Z4
Singleton, G. T.—R10
Smith, C. P.—Q2, Q7
Smith, P. W., Jr.—Z7
Snowden, J. C.—V1
Sokol, G.—V3
Soron, H. I.—I3
Speaks, C.—U5
Spence, J. E.—H3, Z2, Z3
Stangerup, P.—L7
Starr, E. A.—X4
Steinberg, B. N.—H6
Stevens, K. N.—U8
Stockhausen, J. H.—L5
Stocklin, P. L.—H4
Stoicheff, B.—T3
Strong, W. J.—I3, S7
Stuehr, J.—AA1
Sussman, B.—L2
Sutherland, L. C.—K1

Tanous, L. D.—CC3
Teacher, C. F.—Q6
Thiessen, G. J.—E5
Thompson, W., Jr.—H1
Tiersten, H. F.—WS2
Tillman, T.—U4
Torick, E.—H9, X9
Trahiotis, C.—U9
Truby, H. M.—I9
Tsui, Y. T.—Z9
Tuck, E. O.—C9
Turner, R.—T4

Ungar, E. E.—V4
Uphoff, R. L.—R2
Urick, R. J.—L3

Van Houten, J. J.—D4, X3
Veneklasen, P. S.—J6, J7, S3, S4
Voiers, W. D.—Q7, Q9, U10, Y10
von Gierke, H.—A3
Voots, R. J.—N2

Wagner, R. A.—D3
Walker, W. F.—CC10
Warfield, D.—U1
Warnaka, G. E.—BB3
Watson, C. S.—N7
Watters, B. G.—P8
Webster, J. C.—U6
Weinstein, M. S.—G10
Welsby, V. G.—G4
Wenner, C.—F5
West, J. E.—J5, X7
Westervelt, P. J.—G3
Wetherill, E. A.—S1
White, P. H.—C5
Whitmore, J. K.—F2
Whymark, R. R.—CC8
Wiecinski, F. J.—CC6
Wilbanks, W. A.—F1, F2
Williams, A. O., Jr.—G3
Williams, C. E.—U8
Wilson, G. P.—J11
Wilson, W. L.—CC6
Winzer, G. E.—B5
Wood, D. E.—Y3
Woods, B.—U8
Wollett, R. S.—WS3
Wright, D. V.—V5
Wright, H. A.—D3
Wright, H. N.—B6, B7

Yeager, E.—AA1
Yeh, G. C. K.—BB4
Young, I. M.—F5
Young, J. R.—Y4
Young, J. M.—W4, W5, W6
Young, R. W.—J9

Zadnik, T.—P1
Zwislocki, J. J.—F7

INDEX TO VOLUME 37

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How To Use This Index

This volume index is similar in form to the cumulative indexes of this JOURNAL, covering, respectively, Volumes 1–10, 11–20, 21–30, and 31–35, and it is composed of three main divisions:

1. **Author Index** to Volume 37
2. **Inventor Index to Acoustical Patents,** Volume 37
3. **Analytic Subject Index** to Volume 37

The Subject Index to Volume 37 of *The Journal of the Acoustical Society of America* lists the titles of all items as they have appeared in the JOURNAL. They are grouped under the 16 major section headings as listed in the **Classification of Subjects,** which follows immediately after these paragraphs. Each of these sections is subdivided into a considerable amount of decimally numbered subjects. Each subject is further subdivided into 8 parts entitled, respectively,

1. **Papers**
2. **Letters to the Editor**
3. **Abstracts**
4. **Subtitles**
5. **Patents**
6. **Book Reviews**
7. **News**
8. **Errata**

Papers catalogues alphabetically by title those JOURNAL papers covered by the specific area of the decimal heading under which these are listed. **Abstracts** lists alphabetically the titles of papers presented at meetings. **Subtitles** includes some subtitles from Papers whose titles do not fully describe all the areas covered therein; specially "devised" subtitles when such did not appear in the Paper itself; and some Figure captions. Thus, while the Subtitles portion of the Index is informal, it is hoped that it will increase the probability of finding the desired information quickly. **Patents** lists alphabetically the titles of all Patents as they have appeared in the JOURNAL.

References on most subjects can be located immediately by a logical use of the Classification of Subjects. In the case where the reference sought is of an unusual character, where there is uncertainty as to the specific area under which it might have been classified, it can usually be located quite quickly by the process of eliminating those sections and subjects under which it is quite improbable that the reference might have been listed. Very often, items have been crossreferenced. Obviously, the author or inventor indexes are more convenient than the Subject Index when one knows the name of the author of the paper or the inventor of the patent of interest.

The reader, or his librarian, should go over the list of Errata (Section 0.1) and either make the indicated corrections in the original papers in the JOURNAL or enter a note alongisde the title of the original paper itself: "See Erratum, Vol. *XX*, p. *xxx*.

The *References to Contemporary Papers on Acoustics* are identified in each issue of the JOURNAL where they appear by the same decimal numbers listed in the Classification of Subjects, and may be consulted for references in other journals than our own. In Volume 37, these references can be found beginning on pages 189, 546, and 941.

Classification of Subjects

This classification supersedes all previous ones; there have been major changes and additions.

0 GENERAL

0.1 Errata
0.2 Conferences, Lectures, and Announcements, not of the Acoustical Society of America
0.3 Nonacoustical Theories
0.4 Nonacoustic Devices
0.5 General Acoustics Notes
0.6 Biographical, Historical, and Personal Notes, not of the Acoustical Society of America
0.7 Editorials

1 ACOUSTICAL SOCIETY OF AMERICA

1.1 General, Unclassified
1.2 Constitution and Bylaws
1.3 History
1.4 Honorary Members
1.5 Meetings
1.6 Members and Membership Lists
1.7 Committee Activities
1.8 Prizes, Medals, and Awards
1.9 Regional Chapters

2 ARCHITECTURAL ACOUSTICS

2.1 General, Unclassified
2.2 Auditorium Design. (See also 7.6.)
2.3 Studies of Existing Auditoria and Acoustic Enclosures
2.4 Sound Absorption: Theory and Methods of Measurement of. (See also 2.5.)
2.5 Materials for Sound Absorption. Values of Absorption Coefficients and Acoustic Impedances
2.6 Noise Reduction by Increased Room Absorption
2.7 Reverberation and Echoes. (See also 2.3, 2.4, 2.8, 2.9, 2.10, 11.2, 11.4, and 11.7.) Normal Modes in Rooms. Diffusivity. Frequency Response. Subjective Effects
2.8 Reverberation-Measuring Instruments. (See also 2.7 and 5.15.)
2.9 Sound Transmission through Walls, Theory and Methods of Measurement of. (See also 2.10.)

2.10 Sound-Insulating Structures. Values of Transmission Coefficients. (See also 7.6.)
2.11 Vibration-Insulating Supports in Building Acoustics. (See also 5.21 and 12.3i.)
2.12 Damping of Panels
2.13 Anechoic-Chamber Design. Wedges
2.14 Sound-Reinforcement Systems for Rooms
2.15 Computer Simulation of Acoustics in Rooms

3 BOOKS, BIBLIOGRAPHIES, AND SURVEYS

3.1 Books and Book Reviews
3.2 Bibliographies
3.3 Patents
3.4 Surveys, Historical and Philosophical Literature

4 PHYSIOLOGICAL AND PSYCHOLOGICAL ACOUSTICS

4.1 General, Unclassified
4.2 Anatomy and Physiology of the Ear
4.2.1 Middle-Ear Mechanics
4.2.2 Cochlear Mechanics
4.2.3 Models of the Ear
4.2.4 Cochlear Electrophysiology
4.2.5 Auditory Nerve and Central Pathways
4.3 Binaural Hearing. Localization
4.4 Deafness. (See also 5.5.)
4.4.5 Auditory Fatigue, Temporary Threshold Shift
4.5 Instruments Relating to Hearing and for the Testing of Hearing. (See also 5.5.)
4.6 Loudness, Threshold Determinations
4.7 Masking. (See also 5.5.)
4.8 Phase Effects. (See also 4.3.)
4.9 Pitch. Absolute Pitch
4.10 Subjective Tones
4.11 Theories of Hearing
4.12 Timbre
4.13 Ear Acoustical Impedance
4.14 Use of Ear Protectors, Earplugs
4.15 Perception of Signals
4.16 Vibration and Tactile Senses

5 ACOUSTICAL INSTRUMENTS AND APPARATUS. (See also 2.8, 4.5, 9.6, 10.3, 12.3, 12.3p, 12.3z, 13.11, 13.11n, and 13.11t.)

5.1 General, Unclassified
5.2 Amplifiers and Attenuators
5.3 Acoustic-Impedance Measurement. (See also 11.5 and 12.3z.)
5.4 Analyzers and Filters, Acoustic and Electric. Oscillographs. Acoustic Delay Lines and Resonators. (See also 5.15 and 12.3f.)
5.5 Audiometers. (See also 4.4 and 4.5.)
5.6 Broadcasting (Radio and Television)
5.7 Ear Protectors and Earplugs. (See also 4.14.)
5.8 Loudspeakers, Horns, Measurements. Practical Sound Sources. (See also 5.13, 5.17, and 5.18.)
5.9 Microphones. Microphone-Calibration Equipment and Techniques. (See also 5.18, 12.3p, and 13.11t.)
5.10 Navigational Instruments Using Air Sound. Altitude-Measuring Instruments. Sound Ranging. (For Underwater Ranging, see 13.11n.)
5.11 Oscillators, Electrical and Mechanical
5.12 Phase Meters
5.13 Sound-Reproducing Systems, Including Public-Address Systems, Stereophonic Reproduction
5.14 Rayleigh Disks. Radiometers
5.15 Sound-Level Meters. Level Recorders. Sound-Pressure Measurement. (See also 5.4.)
5.16 Sound Recording and Reproducing. General
5.16d Mechanical Recording and Reproducing
5.16f Photographic Recording and Reproducing
5.16m Magnetic Recording and Reproducing
5.16s Electrostatic Recording and Reproducing
5.17 Telephones, Telephone Earphones. (See also 5.13.) Intercommunication Systems
5.18 Transducing Principles, Structures and Materials, General. (See also 5.8, 5.9, 5.17, 10.3, 12.3p, 13.7, and 13.11t.)
5.18d Electrodynamic Transducers
5.18e Electrostatic Transducers
5.18f Magnetostrictive Transducers
5.18g Electromagnetic Transducers
5.18h Feedback Transducers
5.18p Piezoelectric Transducers, Ferroelectrics
5.19 Tuning Forks, Frequency Standards, Frequency-Measuring and -Recording Instruments. Time Standards. Chronographs
5.20 Tone and Wave Synthesizers
5.21 Vibration Devices. Devices for Generating or Damping Vibrations. (See also 12., 12.3, 12.3i, 12.3p, and 12.3v.)

6 MUSIC AND MUSICAL INSTRUMENTS

6.1 General, Unclassified
6.2 Bells, Xylophones. Other Instruments having Rigid Vibrators
6.3 Brass Wind Instruments (Lip-Vibrated)
6.4 Drums and Other Membranophonic Instruments
6.5 Pipe Organs
6.6 Pianos and Other Keyboard Stringed Instruments
6.7 Violin Family. Stringed Instruments, Except Keyboard Type
6.8 Wood Winds
6.9 Electrical Musical Instruments
6.10 Reed Organs. Accordions, Harmonicas
6.11 Singing
6.12 Intonation. Vibrato. Musical Scales. Musical Composition
6.13 Electronic Music

7 NOISE AND NOISE CONTROL

7.1 General, Unclassified
7.2 Annoyance. Effect of Noise on Human Beings
7.4 Community Noise
7.5 Noise Spectra
7.6 Noise in Buildings. (See also 2.2.)
7.7 Machinery Noise. Mufflers. Noise Silencers
7.8 Noise Generators (Solid, Liquid, and Gaseous). Sirens
7.10 Aerodynamic Noise. Jet Noise

8 STANDARDS

8.1 General, Unclassified

9 SPEECH COMMUNICATION

9.1 General, Unclassified
9.2 Anatomy and Physiology of the Larynx and Vocal Tract
9.3 Acoustic Analysis of Speech
9.4 Speech Synthesis
9.5 Perception of Speech and Speechlike Sounds. (SS also 4.15.)
9.6 Measures of Speech Intelligibility, Quality, Information Content
9.7 Phonetics, Linguistics, Statistics of Language
9.8 Systems for Speech Transmission. Analysis–Synthesis Telephony, Speech Coding
9.9 Instruments for Speech Measurement
9.10 Machine Recognition of Speech

10 ULTRASONICS

10.1 General, Unclassified
10.2 Physical Effects of Ultrasonic Waves. Optical Diffraction. Ultrasonic Processing.
10.3 Ultrasonic Instruments. (See also 5.18.)
10.4 Gases, Ultrasonic Velocity, Dispersion, Absorption. (See also 11.3.)
10.5 Liquids, Ultrasonic Velocity, Dispersion, Absorption. (See also 13.2 and 13.3.)
10.6 Solids, Ultrasonic Velocity, Dispersion, Absorption
10.8 Chemical Effects of Ultrasonic Waves
10.9 Biological Effects of Ultrasonic Waves
10.10 Ultrasonic Relaxation Processes in Solids, Liquids, and Gases

11 RADIATION AND SCATTERING

11.1 General, Unclassified
11.1.5 Analogies
11.2 Reflection, Refraction, Diffraction, and Interference of Sound Waves
11.3 Velocity and Attenuation of Sound Waves. (See also 10.4, 10.5, 10.6, 13.2, and 13.3.)
11.4 Waves in Bounded Media
11.5 Radiation from Vibrating Objects in Air and Other Gases. Acoustic Impedance. Sources of Sound. (See also 5.3, 12.3z, and 13.7.)
11.6 Wave Propagation in Tubes
11.7 Mathematical Theory of Wave Propagation. Ray Acoustics. (See also 11.1.5.)
11.8 Physical Effects of Sound. (See also 12.11.)
11.9 Sounds in the Atmosphere

12 MECHANICAL VIBRATIONS AND SHOCK. (See also 5., 11., and 16.)

12.1 General, Unclassified
12.3 Instruments and Apparatus Relating to Vibration and Shock. (See also 5.3, 5.4, 5.9, 5.21.)
12.3f Mechanical Filters. (See also 5.4.)
12.3i Vibration Isolators, Attenuators, and Dampers. (See also 2.11 and 5.21.)
12.3p Vibration Pickups and Indicators. Calibration Equipment and Techniques. (See also 5.9, 5.18, and 13.11t.)
12.3v Vibration Generators. Shake Tables. (See also 5.21.)
12.3z Mechanical-Impedance Measurement. (See also 5.3 and 11.5.)
12.5 Shock. (See also 14.2 and 13.10.)
12.7 Theory of Vibrating Systems. (See also 11.7 and 11.1.5.)
12.9 Biological Effects of Vibration and Shock. (See also 10.9, 16.2, and 16.3.)
12.10 Seismology. Geophysical Prospecting. Seismographs
1 .11 Effect of Sound on Structures. Fatigue. (See also 11.8.)
12.12 Random Vibration. (Started 1965.)

13 UNDERWATER SOUND

13.1 General, Unclassified
13.2 Propagation of Sound in Water. Attenuation. Fluctuation
13.3 Velocity of Sound in Water. Refraction. Doppler Effect
13.4 Reflection. Echoes. Structures for Absorbing Sound in Water
13.5 Interference. Diffraction
13.6 Scattering. Reverberation in Water
13.7 Radiation from Objects Vibrating under Water. Acoustical and Mechanical Impedance. (See also 5.3, 11.5, and 12.3z.)
13.8 Sound Generation by Liquid Motion, Bubbles, Turbulence, Splashes. (See also 13.12.)
13.9 Noise in Water, Ship Noise. Flow Noise, Biological Noises
13.10 Underwater Macrosonics. Explosions. Distortion. (See also 14.2 and 12.5.)
13.11 Instruments Relating to Underwater Sound
13.11n Navigational Instruments Using Underwater Sound. Underwater-Listening and Echo-Ranging Devices. Sonar
13.11t Transducers for Underwater Sound. Transducer Calibration. (See also 5.18.)
13.12 Acoustic Cavitation

14 AEROACOUSTICS. MACROSONICS

14.1 General, Unclassified
14.2 Macrosonic Propagation. Distortion of the Wavefront. Shock Waves. Blast Waves. Supersonic Boom
14.3 Gross Movement of Matter by Sound Waves. Acoustic Streaming
14.4 Radiation Pressure. (See also 5.14.)
14.5 Interaction of Sound with Sound
14.6 Interaction of Fluid Motion and Sound
14.7 Generation of Sound by Fluid Flow
14.8 Aerothermoacoustics

15 ACOUSTIC SIGNAL PROCESSING

15.1 General, Unclassified
15.2 Statistical Theory of Signals
15.3 Space–Time Processing Methods. Automatic Recognition
15.4 Displays and Sensory Pattern Recognition. Learning Machines
15.5 Instrumentation

16 BIOACOUSTICS

16.1 General, Unclassified
16.2 Acoustic Characteristics of Biological Materials. Tissues. Microstructures from Macromolecular Species to Cellular Level
16.3 Acoustic Measurement Methods in Biological Systems and Media
16.4 Mechanisms of Action of Acoustic Energy on Biological Systems. Physical Processes. Sites of Action
16.5 Use of Acoustic Energy (with or without Other Forms of Energy) in Studies of Structure and Function of Biological Systems
16.6 Sound Generation and Detection by Animals
16.7 Role of Acoustic Energy in the Integrated Behavior of Animals
16.8 Medical Diagnosis with Acoustics
16.9 Medical Use of Ultrasonics for Tissue Modification (Permanent and Temporary)

Author Index to Volume 37

Numerals in boldface type refer to volume numbers. (A) designates Abstract; (L) designates Letter to the Editor; (T) designates Title only; (AN) designates Acoustical News. A separate Inventor Index to Acoustical Patents appears at the end of the regular Author Index.

A

Abramowitz, W. Errata: Phase distortion of reflected sonar pulses [J. Acoust. Soc. Am. **36**, 217–215(L) (1964)]. **37**: 173(L)—1965

Adams, Carl E. Review of *Electrons and Waves* by John R. Price. **37**: 768—1965

Alford, B. (see Jerger, James). **37**: 1194(A)—1965

Allen, W. B. (see Stewart, James L.). **37**: 1079—1965

Alluisi, E. A. (see Loeb, M.). **37**: 1194(A)—1965

Angona, F. A. Longitudinal vibrations of a drill string. **37**: 1216(A)—1965

Arase, Elizabeth M. and Peter D. Hahn. Tables for the mutual radiation resistance and reactance of aligned rectangular pistons in an infinite rigid baffle. **37**: 531(L)—1965

Arlt, G. Resonance–antiresonance of conducting piezoelectric resonators. **37**: 151—1965

—— **and G. R. Schodder.** Some elastic constants of silicon carbide. **37**: 384(L)—1965

Armstrong, H. L. Call for help on teaching experiments in acoustics. **37**: 1143(L)—1965

Ashley, Carlyle M. Power-level criteria for noise control. **37**: 1188(A)—1965

Atal, B. S., M. R. Schroeder, G. M. Sessler, and J. E. West. Reverberation times and early energies in Philharmonic Hall (New York). **37**: 1188(A)—1965

Attanasio, C. R. (see Ryan, R. P.). **37**: 602—1965

Attinger, E. O., Editor. *Pulsatile Blood Flow* reviewed by William J. Fry. **37**: 768—1965

Atvars, J., L. K. Schubert, and H. S. Ribner. Refraction of sound from a point source placed in an air jet. **37**: 168(L)—1965

Axelrod, E. H., B. A. Schoomer, and W. A. Von Winkle. Vertical directionality of ambient noise in the deep ocean at a site near Bermuda. **37**: 77—1965

B

Backus, John. Measurements of clarinet resonance frequencies. **37**: 1203(A)—1965

Baker, Donald M. (see Cook, Richard K.). **37**: 1208(A)—1965

Banta, Edwin D. Lossless propagation of one-dimensional, finite-amplitude sound waves. **37**: 1181(A)—1965

Barger, James E. Directivity of a transducer mounted inside a thin shell. **37**: 1178(A)—1965

Barham, E. G. and W. E. Batzler. Deep-scattering-layer observations off Southern and Baja California. **37**: 1192(A)—1965

Barrett, Robert E. Ultrasonic absorption in solutions of amino acids. **37**: 1196(A)—1965

Bastian, Jarvis and Louise D. Tanous. Repetition and recognition of nonsense. **37**: 1217(A)—1965

Batzler, W. E. (see Barham, E. G.). **37**: 1192(A)—1965

Bauer, B. B. Improving headphone listening comfort. **37**: 1210(A)—1965

—— **and E. Torick.** Experimental studies in underwater directional communication. **37**: 1184(A)—1965

—— **and E. Torick.** Calibration and analysis of underwater earphones. **37**: 1210(A)—1965

Beard, Richard B. Comparison of vibration potentials of bovine serum albumin with that of a paraffin chain salt. **37**: 1196(A)—1965

Beavers, Bob R. Direction pressure-gradient microphones for low frequencies. **37**: 1178(A)—1965

Becker, C. J. and Benjamin F. Cron. Optimum-array gain for directional noise. **37**: 1184(A)—1965

Becker, Richard W. Decision procedures for discriminating between speakers. **37**: 1212(A)—1965

Beguin, Fred P. TESTEAR—an electronic dummy for the physical measurement of sound attenuation of hearing protectors. **37**: 1174(A)—1965

Belar, H. (see Olson, Harry F.). **37**: 1199(A)—1965

Belford, John F. and R. L. Uphoff. Interpretation of results obtained in medical ultrasonic tomography. **37**: 1200(A)—1965

Benade, A. H. and J. W. French. Analysis of the flute head joint. **37**: 679—1965

Benson, R. W. (see Loeb, M.) **37**: 313—1965

Beranek, Leo L. Industrial noise-control procedures. **37**: 1179(A)—1965

Berlin, Harold R., 1896–1965. **37**: 1156—1965

Beyer, Robert T. (see Ryan, R. P.) **37**: 602—1965

Bhatt, Bhalchandra J. (see Thurlow, W. R.). **37**: 837—1965

Bhimani, B. V. Dialects, phonetic transcriptions or phonemes of English? **37**: 1210(A)—1965

——, **L. Earl, and R. Mitchell.** Operationally defined homonyms of one syllable in the English language. **37**: 1210(A)—1965

Bien, Ann (see Gerber, Sanford E.). **37**: 1174(A)—1965

Birdsall, T. G. and R. A. Roberts. Theory of signal detectability: deferred-decision theory. **37**: 1064—1965

Bishop, Dwight E. Judgments of the relative and absolute acceptability of aircraft noise. **37**: 1175(A)—1965

Blackham, E. Donnell (see Fletcher, Harvey). **37**: 851—1965

Blitz, J. *Elements of Acoustics* reviewed by F. B. Stumpf. **37**: 399—1965

Bluestein, Leo I. and Charles M. Rader. Comparison of vector and autocorrelation pitch detectors. **37**: 751(L)—1965

Bobber, Robert J. Diffraction constants of transducers. **37**: 591—1965

Bockemohle, L. P. (see Himelblau, H.). **37**: 1185(A)—1965

Bogdanoff, J. L. and J. E. Goldberg. Comments on: "Free vibration of rotationally symmetric shells." **37**: 931(L)—1965

Bogner, R. E. Construction of calculable high acoustic resistances. **37**: 750(L)—1965

—— Tracking oscillator–analyzer scheme. **37**: 750(L)—1965

Boner, C. P. and Charles R. Boner. Minimizing feedback in sound systems and room-ring modes with passive networks. **37**: 131—1965

Boner, Charles R. Sound-system correction of a church having severe focussed echoes. **37**: 1188(A)—1965

—— (see Boner, C. P.). 37: 131—1965
Bordelon, Derrill J. Comments on "Reception characteristics of a linear array in a random transmission medium" by Lord and Murphy. 37: 387(L)—1965
Borwick, John, Editor. *The Encyclopedia of High Fidelity* reviewed by Harry F. Olson. 37: 188—1965
Boston Technical Publishers, Inc., Publisher. *1960 Physics-Electronics Titles* reviewed by F. E. White. 37: 399—1965
Boudreau, James C. Stimulus correlates of wave activity in the superior-olivary complex of the cat. 37: 779—1965
Bouhuys, Arend. Sound-power production in wind instruments. 37: 453—1965
Bourbon, Walter T. and Lloyd A. Jeffress. Effect of bandwidth of masking noise on detection of homophasic and antiphasic tonal signals. 37: 1180(A)—1965
Bow, Y. F. and E. A. Hiedemann. Propagation of plane compressional waves at finite amplitude in real fluids. 37: 1181(A)—1965
Bowman, Howard S. Nomograms for computing real, imaginary, and absolute values of vector ratios. 37: 751(L)—1965
—— (see Young, Jessie M.). 37: 1208(A)—1965
Bozich, Daniel J. Laboratory simulation of the response of structures exposed to intense acoustic environments. 37: 1197(A)—1965
Bradley, David. Sound propagation in near-stoichiometric Ti–Ni alloys. 37: 700—1965
Bradley, Herbert D., Jr. (see Schwartz, Manuel). 37: 278—1965
Brady, Paul T. Statistical basis for objective measurement of speech levels. 37: 1186(A)—1965
Brand, R. P. and Wesley L. Nyborg. Parametrically excited surface waves. 37: 509—1965
Brandon, M. K. (see Stewart, James L.). 37: 1079—1965
—— (see Westerfield, E. C.). 37: 389(L)—1965
Brandt, John F. Frequency discrimination following auditory fatigue. 37: 1194(A)—1965
Brasch, Jerome K. Vehicular-traffic noise near high-speed highways. 37: 1197(A)—1965
Braungart, Dale C. Effect of ultrasound on permeability of cell membrane. 37: 1195(A)—1965
Breazeale, M. A. (see Gauster, W. B.). 37: 1182(A)—1965
Bricker, Peter D. Technique for objective speech-level measurement. 37: 1185(A)—1965
Brown, M. Vertner and James H. Ricard. Interference pattern observed in reflections from the ocean bottom. 37: 1033—1965
Bucker, H. P., J. A. Whitney, G. S. Yee, and R. R. Gardner. Reflection of low-frequency sonar signals from a smooth ocean bottom. 37: 1037—1965
Buining, E. (see Zwislocki, J.). 37: 1180(A)—1965
Buratti, R. J. (see Cretella, J. P.). 37: 1212(A)—1965
Burgin, George (see Penzes, Leslie E.). 37: 1176(A)—1965
Burke, James E., Dan Censor, and Victor Twersky. Exact inverse-separation series for multiple scattering in two dimensions. 37: 5—1965
Burns, Jay and Henry Halle. Noise spectrum of arc-plasma generators. 37: 383(L)—1965
Butler, Robert A. Some experimental observations on the dc resting potentials in the guinea-pig cochlea. 37: 429—1965

C

Callahan, W. R. Frequency equations for the normal modes of vibration for an elliptical ring, including transverse shear and rotary inertia. 37: 480—1965
—— (see Nakonechny, Basil V.). 37: 579—1965
Calvert, James B. Sound absorption in oxygen/water-vapor mixtures. 37: 386(L)—1965
Campanella, S. J. and D. C. Coulter. Review of formant vocoder technology. 37: 1217(A)—1965
Campbell, Richard A. Feedback and noise-signal detection at three performance levels. 37: 434—1965
—— Masker level and sinusoidal-signal detection. 37: 1181(A)—1965
Capps, Mary Jayne and William E. Collins. Auditory fatigue: influence of mental factors. 37: 167(L)—1965
—— (see Collins, William E.). 37: 793—1965
Carbonell, Jaime R. and M. C. Grignetti. Technique for the representation of speech power-spectrum envelopes. 37: 1211(A)—1965
——, **Charles I. Malme, and Ira Dyer.** Physical model for airblast generation by underwater explosions. 37: 1183(A)—1965
——, **Kenneth N. Stevens, Carl E. Williams, and B. Woods.** Speaker identification by a matching-from-sample technique. 37: 1205(A)—1965
—— (see Malme, Charles I.). 37: 1183(A)—1965
—— (see Warnaka, G. E.). 37: 1215(A)—1965
Cardozo, B. L. Adjusting the method of adjustment: SD vs DL. 37: 786—1965
Carhart, Raymond. Monaural and binaural discrimination against competing sentences. 37: 1205(A)—1965
Carnevale, E. H. High-temperature acoustics techniques and applications. 37: 1204(A)—1965
Carr, Paul H. Reflection of gigacycle-per-second ultrasonic waves from an optical-contact bond. 37: 927(L)—1965
Carter, Ashley H. (see Hirsch, Peter). 37: 90—1965
Carter, N. L. Effect of repetition rate on the loudness of triangular transients. 37: 308—1965
Censor, Dan (see Burke, James E.). 37: 5—1965
Chanaud, R. C. Aerodynamic noise from uncased centrifugal-fan rotors. 37: 1197(A)—1965
—— Aerodynamic sound from centrifugal-fan rotors. 37: 969—1965
—— **and Alan Powell.** Some experiments concerning the hole and ring tone. 37: 902—1965
Chandler, Jane (see Dirks, Donald D.). 37: 1179(A), 1180(A)—1965
Chaney, Robert B., Jr., and J. C. Webster. Comparison of information in certain multidimensional acoustic signals. 37: 1205(A)—1965
Chapman, W. D. (see Li, Kung-Pu). 37: 1211(A)—1965
Chertock, George (see Grosso, Marie). 37: 1213(A)—1965
Christensen, A. (see Muster, Douglas). 37: 1184(A)—1965
Christian, Ermine A. (see Weinstein, Marvin S.). 37: 1183(A)—1965
Christoff, Jerry P., Paul S. Veneklasen, and Myron Mann. Stage-to-auditorium coupling for variable reverberation time. 37: 1188(A)—1965
—— (see Veneklasen, Paul S.). 37: 1188(A), 1202(A)—1965
Chuongvan, C. (see Nyborg, Wesley L.). 37: 1195(A)—1965
Claes, H. P. (see Nyborg, Wesley L.). 37: 1195(A)—1965
Claiborne, Lewis T. (see Olsen, Tore). 37: 755(L)—1965
Clark, Anna Vincent (see Henderson, Malcolm C.). 37: 457—1965
Clarke, Frank R. Equivalent forms in intelligibility testing—limitations and an alternative procedure. 37: 1205(A)—1965
—— Speaker recognition by humans. 37: 1211(A)—1965
Clarke, Hugh J. (see Kendig, Paul M.). 37: 99—1965
Clay, C. S. and W. L. Liang. Reproducibility of reflections from the bottom of the ocean. 37: 1191(A)—1965
—— (see Parvulescu, Antares). 37: 1218(A)—1965
Coats, A. (see Jerger, James). 37: 1194(A)—1965
Cohen, M. G. and E. I. Gordon. Acoustic beam probing, using optical techniques. 37: 1204(A)—1965

—— (see Gordon, E. I.). 37: 1204(A)—1965
Cohen, Marion F. Effects of stimulus presentation rate upon intelligibility-test scores. 37: 1206(A)—1965
——, **J. Mickunas, Jr., J. F. Miller, and William D. Voiers.** Diagnostic rhyme test for the evaluation of communications systems. 37: 1206(A)—1965
Collins, William E. and Mary Jayne Capps. Effects of several mental tasks on auditory fatigue. 37: 793—1965
—— (see Capps, Mary Jayne). 37: 167(L)—1965
Cook, Bill D. Optical method for ultrasonic waveform analysis, using a recursion relation. 37: 172(L)—1965
Cook, Richard K. and Donald M. Baker. Ionospheric motions caused by Rayleigh waves. 37: 1208(A)—1965
——, Chairman, **and George W. Wood,** Secretary. Report of the Acoustics Research Survey Committee. 37: 392(AN)—1965
—— (see Waterhouse, Richard V.). 37: 424—1965
Corliss, Edith L. R. Loudness from a mechanistic standpoint. 37: 1174(A)—1965
—— **and George E. Winzer.** Study of methods for estimating loudness. 37: 1174(A)—1965
Cottis, M. G. Green's-function technique in the dynamics of a finite cylindrical shell. 37: 31—1965
Coulter, D. C. (see Campanella, S. J.). 37: 1217(A)—1965
Cox, Henry. Coherence in multiple random processes. 37: 1185(A)—1965
Crede, Charles E. 1913–1964. Cyril M. Harris. 37: 537(AN)—1965
Creelman, C. Douglas. Auditory sensitivity and pressure at the tympanum. 37: 1175(A)—1965
—— (see Nieder, Philip C.). 37: 136, 749(L)—1965
—— (see Pedersen, Paul). 37: 1203(A)—1965
Cretella, J. P. and J. E. Spence. Mathematical formulation of a class of acoustic-radiation problems involving line sources. 37: 1212(A)—1965
——, **J. E. Spence, and R. J. Buratti.** Fields radiated from an acoustic line source above a fluid-fluid interface. 37: 1212(A)—1965
Cron, Benjamin F., Beverly C. Hassell, and Frank J. Keltonic. Comparison of theoretical and experimental values of spatial correlation. 37: 523—1965
—— **and Albert H. Nuttall.** Phase distortion of a pulse caused by bottom reflection. 37: 486—1965
—— (see Becker, C. J.). 37: 1184(A)—1965
Cuddy, Lola Lane. Improved pitch perception with training on a single tone. 37: 1193(A)—1965
Curtis, Joseph C. Effects of ultrasound on the ultrastructure of liver cells of the mouse. 37: 1196(A)—1965

D

Dahlke, H. E. and John J. Van Houten. Pistonphone calibration of microphones at infrasonic frequencies. 37: 1209(A)—1965
Dallos, Peter J. and Craig O. Linnell. Subharmonic generation in the peripheral auditory system of rodents. 37: 1200(A)—1965
Damianopoulos, E. D. (see Zwislocki, J.). 37: 1180(A)—1965
Dardy, Henry D. (see Hunter, Joseph L.). 37: 1214(A)—1965
Darling, D. A. and T. B. A. Senior. Low-frequency expansions for scattering by separable and nonseparable bodies. 37: 228—1965
Deatherage, Bruce H. (see Hafter, Ervin R.). 37: 1181(A)—1965
Dence, D. F. and J. E. Spence. Application of the Tchebyshev polynomial to element reduction of linear arrays. 37: 1184(A)—1965
Dew, Donald and Paul Moore. Microtemporal synchronization system for ultrahigh-speed photography. 37: 1216(A)—1965
Diercks, K. J. and Robert Hickling. Study of acoustic scattering by hollow metallic spheres. 37: 1176(A)—1965
Dietrich, Charles W. (see Ungar, Eric E.). 37: 1207(A)—1965
Dietz, F. T. (see Willis, Jack). 37: 125—1965
DiNapoli, F. R. and F. H. Middleton. Surface waves in an inhomogeneous liquid layer. 37: 1217(A)—1965
Dirks, Donald D. and Jane Chandler. Effects of intensity level on threshold shifts produced by pulsed and continuous maskers. 37: 1180(A)—1965
—— **and Jane Chandler.** Threshold shifts produced by pulsed and continuous maskers at equal sound pressure and effective masking levels. 37: 1179(A)—1965
—— **and Carolyn Malmquist.** Shifts in air-conduction thresholds produced by pulsed and continuous contralateral masking. 37: 631—1965
Doelle, Leslie L. Provision for adequate loudness in recently built auditoria. 37: 1202(A)—1965
Dranetz, Abraham I. and Harvey Rathbun, Jr. Analysis of electroacoustical transducers by differential immittance techniques. 37: 1177(A)—1965
Dunn, Floyd. Ultrasonic absorption in biological media. 37: 1195(A)—1965
—— (see Hawley, S. A.). 37: 1195(A)—1965
Duykers, L. R. B. Deformation of an exponential pulse with a finite rise time in the region of total reflection. 37: 1052—1965
Dyer, Hubert J. Changes in behavior of mosses treated with ultrasound. 37: 1195(A)—1965
Dyer, Ira. Measuring and monitoring low-frequency space-vehicle noise. 37: 1188(A)—1965
—— (see Carbonell, Jaime R.). 37: 1183(A)—1965
—— (see Malme, Charles I.). 37: 1183(A)—1965

E

Earl, L. (see Bhimani, B. V.). 37: 1210(A)—1965
Eby, Edward S. and Lloyd T. Einstein. General spreading-loss expression. 37: 933(L)—1965
Edge, Philip M., Jr., and William H. Mayes. Some research features and capabilities of the Langley low-frequency noise facility. 37: 1189(A)—1965
Edmonds, Peter D. Ultrasonic absorption by protein solutions. 37: 1195(A)—1965
Egan, James P. Demonstration of masking-level differences by binaural beats. 37: 1143(L)—1965
——, **William A. Lindner, and Dennis McFadden.** Masking-level differences and the form of the psychometric function. 37: 1181(A)—1965
Eichler, Ewald. Thermal circuit approach to vibrations in coupled systems and the noise reduction of a rectangular box. 37: 995—1965
Eichmeier, Joseph (see Knoll, Max). 37: 1161—1965
Eijkman, E. and A. J. H. Vendrik. Can a sensory system be specified by its internal noise? 37: 1102—1965
Einspruch, Norman G. (see Olsen, Tore). 37: 755(L)—1965
Einstein, Lloyd T. (see Eby, Edward S.). 37: 933(L)—1965
Eisenberg, Peter. International Symposium on Ultrasonic Diagnostics in Ophthalmology. 37: 542(AN)—1965
Eldred, Kenneth McK. and Louis C. Sutherland. Estimating the acoustic loading on building structures near launch sites. 37: 1189(A)—1965
Eldredge, Donald H. Anatomical dimensions and electrical potentials of the chinchilla cochlea. 37: 1200(A)—1965

Eller, Anthony and H. G. Flynn. Lifetimes of empty cavities moving through a liquid. **37**: 1182(A)—1965
—— **and H. G. Flynn.** Rectified diffusion during nonlinear pulsations of cavitation bubbles. **37**: 493—1965
Elliott, D. N. and W. D. Riach. Effect of repeated practice with and without feedback upon discrimination performance. **37**: 1194(A)—1965
—— (see Fujita, Shiro). **37**: 139, 1205(A)—1965
Elliott, Lois L. Change in simultaneous masking of short tones by narrow-and wide-band noise bursts. **37**: 1180(A)—1965
Enns, R. H. Ultrasonic absorption and dispersion in monatomic gases. II. **37**: 754(L)—1965
Epstein, David. Influence of ocean bottom on explosion bubble-pulse period. **37**: 1182(A)—1965
Evans, W. O. (see Loeb, M.). **37**: 1194(A)—1965

F

Fassett, D. W. (see Riley, E. C.). **37**: 924(L)—1965
Fay, Richard Dudley 1891–1964. **37**: 759(AN)—1965
Feith, K. E. and R. R. Whymark. Effect of hydrostatic pressures on magnetostrictive vibrators. **37**: 1217(A)—1965
Fiala, Walter T., J. K. Hilliard, J. A. Renkus, and John J. Van Houten. Electropneumatic acoustic generator. **37**: 1177(A)—1965
Figwer, J. J. (see Schultz, Theodore J.). **37**: 1202(A)—1965
Finck, Alfred. Pure-tone masking in the cochlear nerve of the golden hamster. **37**: 1200(A)—1965
Fitzroy, Dariel. Problems presented by theatre-in-the-round. **37**: 1202(A)—1965
Flanagan, J. L. Acoustic modes of a hemispherical room. **37**: 616—1965
Flanders, Paul B. 1900–1965. Warren P. Mason. **37**: 935(AN)—1965
Fletcher, Harvey, E. Donnell Blackham, and O. Norman Geersten. Quality of violin, viola, 'cello, and bass-viol tones. I. **37**: 851—1965
Fletcher, J. L. (see Loeb, M.). **37**: 313—1965
Flinchbaugh, David E. Focusing ultrasonic system applicable to two-dimensional optical beam scanning and laser output modulation. **37**: 975—1965
Flügge, W. and J. R. Hutchinson. Axial vibrations of a semiinfinite viscoelastic rod with external elastic constraint. **37**: 14—1965
Flynn, H. G. Damping constants and the definition of models for cavitation bubbles. **37**: 1182(A)—1965
—— (see Eller, Anthony). **37**: 493, 1182(A)—1965
French, B. (see Jerger, James). **37**: 1194(A)—1965
French, J. W. (see Benade, A. H.). **37**: 679—1965
Fry, William J. Review of *Pulsatile Blood Flow* edited by E. O. Attinger, **37**: 768—1965
Fujita, Shiro and D. N. Elliott. Temporary threshold shifts in monkey. **37**: 1205(A)—1965
—— **and D. N. Elliott.** Thresholds of audition for three species of monkey. **37**: 139—1965

G

Galloway, W. J. Selection of an objective measure for motor-vehicle noise. **37**: 1198(A)—1965
Gannon, R. Patrick (see Moscovitch, David H.). **37**: 1201(A)—1965
Gardner, R. R. (see Bucker, H. P.). **37**: 1037—1965
Gauster, W. B. and M. A. Breazeale. Interference of finite-amplitude ultrasonic waves in solids. **37**: 1182(A)—1965
Geertsen, O. Norman (see Fletcher, Harvey). **37**: 851—1965
Geldard, Frank A. and Carl E. Sherrick. Multiple cutaneous stimulation: The discrimination of vibratory patterns. **37**: 797—1965
Gerber, Sanford E. and Ann Bien. Evaluation of Air Force hearing data. **37**: 1174(A)—1965
Glackin, Robert (see Ruben, Robert J.). **37**: 1204(A)—1965
Glantz, J. (see Zwislocki, J.). **37**: 1180(A)—1965
Glorig, Aram. Hearing-conservation programs. **37**: 1179(A)—1965
Goerke, Vernon H. (see Young, Jessie M.). **37**: 1208(A)—1965
Gogos, Creighton M. (see Wiener, Francis M.). **37**: 738—1965
Gold, Bernard. Combinations of channel vocoders and formant vocoders. **37**: 1198(A)—1965
—— **and Joseph Tierney.** Digitized voice-excited vocoder for telephone-quality inputs, using bandpass sampling of the baseband signal. **37**: 753(L)—1965
Goldberg, J. E. (see Bogdanoff, J. L.). **37**: 931(L)—1965
Goodfriend, Lewis S. Equipment and techniques for noise measurements. **37**: 1173(A)—1965
Goodman, R. R. Comment on two Papers concerning reverberation from the ocean floor. **37**: 174(L)—1965
Gordon, Colin and P. W. Smith, Jr. Acoustic losses of a resonator with steady gas flow. **37**: 257—1965
—— (see Lyon, Richard H.). **37**: 1216(A)—1965
Gordon, David F. (see Pedersen, Melvin A.). **37**: 105—1965
Gordon, E. I. and M. G. Cohen. Acoustic beam probing, using optical techniques in lossy media. **37**: 1204(A)—1965
—— (see Cohen, M. G.). **37**: 1204(A)—1965
Gourevitch, George. Auditory masking in the rat. **37**: 439—1965
Gray, A. H., Jr. Behavior of linear systems with random parametric excitation. **37**: 235—1965
Green, Charles E. Pressure vessel for farfield SONAR transducer calibration. **37**: 1209(A)—1965
Green, David M. Antiphasic versus monaural detection as a function of duration. **37**: 1180(A)—1965
—— Masking with two tones. **37**: 802—1965
Greene, Gary E. (see Young, Jessie M.). **37**: 1208 (2 Abstracts)—1965
Greenspan, Martin. Review of *Ultrasonic Cutting* by L. D. Rozenberg, V. F. Kazantsev, L. O. Makarov, and D. F. Yakhimovich. **37**: 1161—1965
Grignetti, M. C. (see Carbonell, Jaime A.). **37**: 1211(A)—1965
Grosso, Marie and George Chertock. Numerical calculation of sound radiation from a vibrating surface of revolution. **37**: 1213(A)—1965
Guinan, John J., Jr. (see Peake, William T.). **37**: 1201(A)1965
Guttman, Newman. Binaural interactions of three clicks. **37**: 145—1965

H

Hafter, Ervin R., Donald Henderson, and Bruce H. Deatherage. Measure of the critical band for clicks. **37**: 1181(A)—1965
Hahn, Peter D. (see Arase, Elizabeth M.). **37**: 531(L)—1965
Hall, J. L., II. Binaural interaction in the accessory superior-olivary nucleus of the cat. **37**: 814—1965
Halle, Henry (see Burns, Jay). **37**: 383(L)—1965
Hanes, G. R. (see Piercy, J. E.). **37**: 1204(A)—1965
Harbold, Mary L. and Bruce Steinberg. Scattering by *n*-element arrays of identical rigid sphere. **37**: 1184(A)—1965
—— (see Simmons, J. W.). **37**: 1212(A)—1965

Hargrove, L. E. Numerical results from a successive diffraction theory for diffraction of light by ultrasonic waves. 37: 1182(A)—1965
Harris, A. S. and B. G. Watters. Noise environment of restaurants. 37: 1197(A)—1965
Harris, Cyril M. Charles E. Crede, 1913–1964. 37: 537(AN)—1965
——, President. 68th Meeting, 1964, Austin. 37: 178(AN)—1965
—— **and William M. Waite.** Measurement of speech spectra recorded with a close-talking microphone. 37: 926(L)—1965
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S

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Sanders, Guy. Noise control in air-handling systems. **37**: 1178(A)—1965
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Schiller, Elaine. Measuring noise cancellation of carbon transmitters while compensating for self-generated noises. **37**: 1210(A)—1965
Schloss, Fred. Measurement of natural frequencies and fluid loading of propellers, using mechanical-impedance techniques. **37**: 1215(A)—1965
Schnaus, Urban E. Thermal relaxation in oxygen with CH_4 and CD_4 admixtures. **37**: 1—1965
Schnitzler, Ronald M. (see Wilson, Walter L.). **37**: 1217(A)—1965
Schodder, G. R. (see Arlt, G.). **37**: 384(L)—1965
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Schroeder, M. R. Artificial reverberation: review and future outlook. **37**: 1192(T)—1965
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—— (see Atal, B. S.). **37**: 1188(A)—1965
—— (see Mermelstein, Paul). **37**: 1186(A)—1965
Schubert, Earl D. (see White, Frederick E.). **37**: 189, 546, 941—1965
Schubert, L. K. (see Atvars, J.). **37**: 168(L)—1965
Schultz, Theodore J. A new standard for the field measurement of airborne transmission loss. **37**: 1187(A)—1965
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—— **and K. S. Oliphant.** Effect of filter bandwidth and attenuation characteristics on sound-transmission-loss measurements. **37**: 1187(A)—1965
Sessler, G. M. Propagation of ionic magnetohydrodynamic waves. **37**: 1208(A)—1965
—— **and J. E. West.** Electrostatic microphones with foil electret. **37**: 1209(A)—1965
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Shapiro, Arthur. Approximation to the array signal-gain fluctuation spectrum. **37**: 1075—1965
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—— **and N. G. Parke.** Use of toroidal wavefunctions for the free-flooding ring transducer. **37**: 1213(A)—1965
Sherrick, Carl E. (see Geldard, Frank A.). **37**: 797—1965
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Simmons, J. W. and Mary L. Harbold. Two-dimensional acoustic fields and amplitude-phase space. **37**: 1212(A)—1965
Singleton, George T. (see Konishi, Teruzo). **37**: 1201(A)—1965
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Sirovich, Lawrence and James K. Thurber. Propagation of forced sound waves in rarefied gasdynamics. **37**: 329—1965
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—— (see Voiers, William D.). **37**: 1199(A)—1965
Smith, H. I. Optical-contact bonding. **37**: 928(L)—1965
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—— (see Gordon, Colin). **37**: 257—1965
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Sokol, G. (see Lazan, B. J.). **37**: 1207(A)—1965
Sonstegard, David A. (see McIvor, K.). **37**: 931(L)—1965
Soroka, Walter W. (see Wilson, George P.). **37**: 286—1965
Soron, Henry I. (see Michaels, Sheldon B.). **37**: 1186(A)—1965
Speaks, Charles and James Jerger. Method for measurement of speech identification. **37**: 1205(A)—1965
Spence, J. E. (see Cretella, J. P.). **37**: 1212 (2 Abstracts)—1965
—— (see Dence, D. F.). **37**: 1184(A)—1965
Spitznogle, F. R. (see Victor, A. S.). **37**: 894—1965
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Starr, Edward A. High-pressure low-frequency microphone calibration. **37**: 1209(A)—1965
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Sterner, J. H. (see Riley, E. C.). **37**: 924(L)—1965
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Stuehr, John (see Jackopin, LeRoy). **37**: 1214(A)—1965
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Subrahmanyam, S. V. and J. E. Piercy. Ultrasonic relaxation and *cis-trans* isomerization in methyl and ethyl formates. **37**: 340—1965
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Sutherland, Louis C. (see Eldred, Kenneth McK.). **37**: 1189(A)—1965
Sutton, W. L. (see Riley, E. C.). **37**: 924(L)—1965
Swope, R. H. (see Parker, J. G.). **37**: 718—1965

T

Tanner, L. N. (see Pechter, L. S.). **37**: 66—1965
Tanous, Louise D. (see Bastian, Jarvis). **37**: 1217(A)—1965
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Tillman, Tom W. (see Olsen, Wayne O.). **37**: 1205(A)—1965
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Toole, F. E. and B. McA. Sayers. Lateralization judgments and the nature of binaural acoustic images. **37**: 319—1965
Torick, E. (see Bauer, B. B.). **37**: 1184(A), 1210(A)—1965
Toulis, W. J. Acoustic-backing techniques for transducers and radiators. **37**: 250—1965
Trahiotis, Constantine (see Riach, W. D.). **37**: 1206(A)—1965
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Turner, R. (see Piercy, J. E.). **37**: 1204(A)—1965
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U

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Uphoff, R. L. (see Belford, John F.). **37**: 1200(A)—1965
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Usher, Theron, Jr. Random bearing errors in split-beam systems. **37**: 912—1965

V

Van Houten, John J. (see Dahlke, H. E.). **37**: 1209(A)—1965
—— (see Fiala, Walter T.). **37**: 1177(A)—1965
Vendrik, A. J. H. (see Eijkman, E.). **37**: 1102—1965

Veneklasen, Paul S. Sound reinforcement for the Los Angeles Pavilion. **37**: 1202(A)—1965
——, **V. O. Knudsen, R. W. Leonard, and Jerry P. Christoff.** Acoustical design of the Los Angeles Pavilion. **37**: 1202(A)—1965
——, **Jose C. Ortega, Jerry P. Christoff, John Little, and Bonard Morse.** Acoustical modeling in architectural acoustics. **37**: 1188(A)—1965
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Verrillo, R. T. Temporal summation in vibrotactile sensitivity. **37**: 843—1965
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Von Winkle, W. A. (see Axelrod, E. H.). **37**: 77—1965
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—— (see Sessler, G. M.). **37**: 1209(A)—1965
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—— (see Whitmore, John K.). **37**: 1179(A)—1965
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Wood, George W. (see Cook, Richard K.). **37**: 392(AN)—1965
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Wright, H. A. (see Wagner, R. A.). **37**: 1177(A)—1965
Wright, H. N. Is there a standard loudness? **37**: 1175(A)—1965
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Wu, Chien-Heng (see Plunkett, Robert). **37**: 28—1965

Y

Yakhimovich, D. F. (see L. D. Rozenberg). **37**: 1161—1965
Yeager, E. (see Jackopin, LeRoy). **37**: 1214(A)—1965
Yee, G. S. (see Bucker, H. P.). **37**: 1037—1965
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Inventor Index to Acoustical Patents, Volume 37

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Case, Delbert E. 3,093,761. Vibratory electric motor. **37**: 408—1965
Cecce, Robert F. (see Kerley, James J., Jr.). **37**: 1170—1965
Cech, Karl. 3,140,832. Sound tape magazine or the like. **37**: 571—1965
Center, John L. (see Andries, Francis M.). **37**: 569—1965
Cheney, George D. and Theodore C. Foster. 3,140,362. Magnetic traducer head assemblies. **37**: 571—1965
Chiarello, Sesto I. 3,144,851. Sonic signal. **37**: 569—1965
Church, Donald R. and Miguel C. Junger. 3,139,603. Mass-loaded electromechanical transducer? **37**: 207—1965
Clark, Trevor. 3,144,630. Sonobuoy apparatus. **37**: 576—1965
Clement, Alvin H. 3,108,249. Correlation by random time reference utilization. **37**: 214—1965
Clements, Roy J. 3,100,023. Means for determining the fluid level in a well. **37**: 213—1965
Cline, Charles W. and Selmer G. van Stocker. 2,957,092. Ultrasonic test apparatus. **37**: 775—1965
Coen, Aldo L. 3,133,162. Loud speaker structure. **37**: 1163—1965
Collins, Joseph L. 3,161,730. Ultra-low frequency recording. **37**: 962—1965
Cook, Edward G., Julius F. Tibolla, and Constantine Foundos. 3,019,637. Ultrasonic testing arrangement. **37**: 1169—1965
Cousteau, Jacques Yves (see Gagnan, Emile). **37**: 569—1965
Coyle, William J. 3,037,734. Shock mount. **37**: 1171—1965

D

Dahl, Robert R. and Howard L. Erickson. 2,936,790. Noise reducing flow control device. **37**: 778—1965
Darner, Charles L. (see Steinberger, Raymond L.). **37**: 576—1965
David, Edward E., Jr., and John R. Pierce. 3,109,070. Pitch synchronous autocorrelation vocoder. **37**: 575—1965
Davis, Charles C. 3,142,729. Phonograph reproducer. **37**: 401—1965
Dean, Frank J., Jr. 3,094,189. Air mixing and sound attenuating chamber. **37**: 774—1965
DeHaan, Jacob Izaak (see Schenkel, Gerrit). **37**: 401—1965
Delmerico, Falco J. (see Beck, Henry C.). **37**: 1172—1965
De Luca, Frank P. (see Houghton, Richard B.). **37**: 407—1965
De Prisco, Carmine F. (see Jones, James Bryon). **37**: 777—1965
Deremer, Floyd E. 3,103,256. Silencer or muffler. **37**: 208—1965
De Stephen, Albert M. (see Gibson, Walter J.). **37**: 777—1965
D'Eustachio, Dominic. 3,087,576. Sound absorbers. **37**: 770—1965
—— 3,094,188. Sound absorbers. **37**: 771—1965
De Vito, Michael F. 2,951,123. Voice activated intercommunication system. **37**: 208—1965
Diamond, Milton J., Phillip O. Frederickson, and Robert F. Spain. 3,003,628. Sonic inspection apparatus. **37**: 966—1965
Ditzel, Russel, Edward G. Ising, and Don Pastore 3,149,526. Bridge for stringed musical instruments. **37**: 774—1965
Dollens, James R. 3,009,484. Sound attenuating laminated pipe. **37**: 1169—1965
Dones, Raymon. 3,150,739. Loud speaker enclosure. **37**: 1164—1965
Doty, William E. N. 3,065,453. Compositing sequentially produced signals. **37**: 209—1965
Dubský, Bořivoj and Oldřich Straka. 2,998,536. Electromagnetic pick-up apparatus for the reception of oscillations. **37**: 965—1965
Duinker, Simon and Jules Bos. 3,145,453. Method of producing magnetic heads with bonding glass gap spacers. **37**: 571—1965
Duncan, Robert P. (see Zink, John S., Jr.). **37**: 404—1965
Durio, John R. 3,152,227. Automatic recording tape splicer. **37**: 572—1965
Dymski, Donald A. and Joseph M. Solomon. 3,132,208. Electronic stethoscope. **37**: 401—1965

E

Eckel, Oliver C. 3,077,149. Cable floor structure with offset connectors. **37**: 1163—1965
Edwards, Orville, P. (see Zink, John S., Jr.). **37**: 404—1965
Eisler, Joseph D. (see Landrum, Ralph A., Jr.). **37**: 214—1965
Eldredge, Kenneth R. 3,157,748. Magnetic transducer. **37**: 961—1965
Eldridge, Dennis Arthur George (see Lewis, Ewart Gordon). **37**: 776—1965
Eldridge, Donald F. 3,140,361. Magnetic head assembly. **37**: 571—1965
Elmore, John F. 3,163,073. Electric guitar. **37**: 1167—1965
Engel, Walter (see Kuhrt, Friedrich). **37**: 206—1965
Engle, Allen W. 3,102,604. Single strength member for multitransducer mounting in acoustic well logging tools. **37**: 213—1965
Enz, Ulrich Ernst (see Pijls, Hermanus Stephanus Josephus). **37**: 773—1965
Erdman, Donald C. 3,005,335. Ultrasonic nondestructive testing apparatus and control therefor. **37**: 964—1965
—— 3,009,353. Ultrasonic measurement apparatus. **37**: 1169—1965
Erickson, Howard L. (see Dahl, Robert R.). **37**: 778—1965
Evans, Chauncey Richard. 3,154,701. Pickup for musical instruments. **37**: 1165—1965
Evans, Daniel I. (see Henry, George E.). **37**: 773—1965

F

Farmen, Bernard (see Polly, Orville L.). **37**: 967—1965
Feid, Jack T. (see Slayter, Games). **37**: 771—1965
Feistman, Myron L., David A. Reinhart, and Robert F. Kantner. 3,153,770. Sonar echo simulator. **37**: 966—1965
Fender, Clarence L. 3,143,028. Adjustable neck construction for guitars and the like. **37**: 573—1965
—— 3,147,332. Electric guitar incorporating pick-up means adapted to minimize beating effects. **37**: 207—1965
—— 3,147,447. Tone control circuit. **37**: 574—1965
Fitzgerald, William J. (see Umile, Louis J.). **37**: 964—1965 1965
Flatow, Tobias. 3,075,608. System for seismic prospecting using the weight dropping technique. **37**: 210—1965

Flowers, John W. and Elmer J. Wade. 3,142,033. Reverberation controlled gain amplifier. **37**: 215—1965
Foster, Manus R. (see Lawrence, Philip L.). **37**: 211—1965
Foster, Theodore C. (see Cheney, George D.). **37**: 571—1965
Foundos, Constantine (see Cook, Edward G.). **37**: 1169—1965
Fowler, Harold E. (see Beck, Henry C.). **37**: 1172—1965
Frederickson, Phillip O. (see Diamond, Milton J.). **37**: 966—1965
Freeman, Jeff E. 3,150,345. Sonic communication system. **37**: 966—1965
Fuchs, Friedrich. 3,153,968. Tops with musical mechanism. **37**: 1167—1965
Fudaley, Solly L. (see Miller, Thomas P.). **37**: 206—1965
Furon, Leon D. 3,011,338. Ultrasonic measurement apparatus. **37**: 1169—1965
—— 3,011,339. Flaw detection apparatus. **37**: 1169—1965

G

Gagnan, Emile and Jacques Yves Cousteau. 3,144,171. Acoustic warning assembly for skin diving apparatus. **37**: 569—1965
Gallagher, Arthur P. 3,114,430. Pulsation snubber or silencer. **37**: 208—1965
Gelletich, Dusan S. 3,156,786. Suspension system for electromagnetic transducers. **37**: 572—1965
George, Ralph W. 2,926,315. Electromechanical filter. **37**: 771—1965
Gerrard, John A. F. (see Aitken, Alexander R.). **37**: 210—1965
Gerteis, Karl M. 3,109,584. Compressor muffler construction and method for muffling compressor discharge gases. **37**: 405—1965
Geyer, Robert L. and Neil R. Sparks. 3,093,810. Seismic well logging data display. **37**: 212—1965
Gibbons, Wilson F. (see Gibson, Walter J.). **37**: 777—1965
Gibson, Walter J., Albert M. De Stephen, and Ernst W. Allardt. 3,056,285. Ultrasonic search tube support having multiplicity of follower movements. **37**: 777—1965
—— **and Wilson F. Gibbons.** 3,056,286. Weld inspection apparatus with two spaced transducers. **37**: 777—1965
Glindmeyer, Victor B. 3,138,220. High fidelity speaker mounting. **37**: 1164—1965
Gnatt, Moshe. 3,155,000. Visual aid-association identification device. **37**: 1167—1965
Görike, Rudolf. 3,146,308. Capacitor microphones. **37**: 401—1965
Graber, Armin E. (see Knutson, Oliver J.). **37**: 570—1965
Graves, Howard K. 3,096,675. Piano action. **37**: 1167—1965
Grist, Franklin James. 3,150,461. Toy sounding space helmet. **37**: 771—1965
Grossenheider, Howard. 3,017,849. Ultrasonic transmitter. **37**: 1169—1965

H

Hagey, Lee P. 3,130,275. Microphone. **37**: 205—1965
Hall, Ross B. 2,993,739. Magnetostrictive bearing assembly. **37**: 965—1965
Hanish, Sam. 3,150,347. Underwater transducer element. **37**: 967—1965
Hardy, Howard C. 3,096,847. Acoustical barrier fence. **37**: 774—1965
Harris, Robert V. 3,148,536. Ultrasonic thickness gage. **37**: 965—1965
Harris, Wilbur T. 3,056,590. Oscillator. **37**: 778—1965
—— 3,142,035. Ring-shaped transducer. **37**: 408—1965
—— 3,155,852. Transducer construction. **37**: 1172—1965
Hartenstein, Raymond G. (see Kerley, James J., Jr.). **37**: 1170—1965
Haslett, Roy William George. 3,145,363. Echo-sounding equipment. **37**: 576—1965
Hautala, Irving R. 3,160,227. Soundproof camera enclosures. **37**: 774—1965
Hayes, Gordon B. 3,140,462. Transducer. **37**: 408—1965
Hayner, Paul F., Daniel Blitz, Kenneth E. Mayo, and Edgar R. Bernier. 3,158,696. Tape recorder. **37**: 961—1965
Hearne, Joseph H. (see Brand, John R.). **37**: 1168—1965
Heath, Robert A. 3,141,518. Muffler. **37**: 209—1965
Hedler, Frank K. (see Myers, Charles R.). **37**: 771—1965
Heintz, Karl O. and Robert S. Stanley. 3,088,094. Seismic recording. **37**: 212—1965
Heller, Robert B. 2,966,056. Ultrasonic testing device. **37**: 776—1965
Henry, Elliott A. 2,985,009. Differential acoustic transducer. **37**: 964—1965
—— 3,019,636. Ultrasonic inspection and measuring means. **37**: 1169—1965
—— 3,057,188. Ultrasonic mechanical impedance measuring device. **37**: 777—1965
Henry, George E. and Daniel I. Evans. 2,976,434. Transducer assembly. **37**: 773—1965
Herbstman, Sidney. 3,143,183. Direct radiator high fidelity loudspeaker. **37**: 1164—1965
Herterich, Walter. 3,133,710. Magnetic recorder. **37**: 570—1965
Herzog, Gerhard (see Savage, Kerry D.). **37**: 213—1965
Hogan, John W. and Frank Zeman. 3,155,359. Mounting bracket for magnetic heads. **37**: 961—1965
Hopkins, Herbert J. 3,136,383. Duplex loud speaker sound box system. **37**: 1164—1965
Houghton, Richard B. and Frank P. De Luca. 3,140,612. Ultrasonic sensor device. **37**: 407—1965
Howell, Derek. 3,155,774. Loudspeaker arrangement. **37**: 1165—1965
Howell, William L. 3,157,246. Diaphragm mounting for stethoscope. **37**: 963—1965
Howry, Douglass H. and Gerald J. Posakony. 2,972,068. Uni-directional ultrasonic transducer. **37**: 773—1965
Hueter, Theodor F. 3,141,148. Underwater sound apparatus. **37**: 408—1965

I

Irazoqui, Carlos A. 3,142,909. Electronic sound repeater mechanism. **37**: 571—1965
—— 3,156,052. Audio instruction repeater. **37**: 961—1965
Irwin, Benjamin H. (see Ludlow, Edmund). **37**: 404 (5 Patents), 406 (2 Patents), 407 (3 Patents)—1965
Ising, Edward G. (see Ditzel, Russel). **37**: 774—1965

J

Jacobs, Richard K. 3,145,365. Acoustic water path simulator. **37**: 778—1965
Jarger, Harold F. 2,928,057. Electromechanical filter arrangement. **37**: 772—1965
Johnson, Alex H. 3,132,788. Tape transporting means for a magnetic recorder. **37**: 570—1965
Johnson, Thomas M. 3,142,132. Sound actuated toy. **37**: 401—1965
Jolly, Richard N. 3,105,568. Seismic profiling system. **37**: 213—1965
Jones, Charles Howard. 3,142,032. Interlaced video display of sea bottom using sonic energy. **37**: 214—1965
Jones, Hal J. (see Aitken, Alexander R.). **37**: 210—1965
Jones, James Byron. 3,056,192. Vibratory welding process and apparatus. **37**: 777—1965

——, **Carmine F. De Prisco, and Nicholas Maropis.** 3,148,293. Vibratory device for delivering vibratory energy at high power. **37**: 777—1965
Joslyn, John. 3,146,657. Musical device. **37**: 574—1965
Joy, Ivan L. 3,057,189. Ultrasonic inspection system. **37**: 777—1965
Junger, Miguel C. 3,142,034. Elastic wave radiator and detector. **37**: 576—1965
—— (see Church, Donald R.). **37**: 207—1965
—— (see Smith, Preston W., Jr.). **37**: 966—1965

K

Kammerer, Helmut and Fritz Knauber. 3,142,354. Sound absorption device and method of manufacture. **37**: 209—1965
Kantner, Robert F. (see Feistman, Myron L.). **37**: 966—1965
Kaplan, Ruth. 3,148,658. Mechanical sound-producing fire alarm device. **37**: 574—1965
Kay, James C. 3,136,852. Telephone amplifier. **37**: 402—1965
Kelly, Thomas N. 3,101,811. Marine type muffler. **37**: 208—1965
Kemp, William G. 3,095,943. Acoustical structure. **37**: 771—1965
Kenney, George Robert. 3,055,451. Speaker cabinet. **37**: 772—1965
Kerley, James J., Jr., Raymond G. Hartenstein, and Robert F. Cecce. 3,037,728. Vibration isolator mount. **37**: 1170—1965
King, John W. and Robert F. Pfost. 3,164,683. Rotary head position determining apparatus. **37**: 962—1965
Kleiner, Rudolph R. (see Zarcone, Jerome). **37**: 773—1965
Kleis, Derk. 3,024,309. Sound reproduction with artificial reverberation. **37**: 1163—1965
Knauber, Fritz (see Kammerer, Helmut). **37**: 209—1965
Knott, Sydney T. and Warren E. Witzell. 3,144,848. Lightweight towed transducer housing. **37**: 577—1965
Knutson, Oliver J., Armin E. Graber, and Wilbur H. Wandell, Jr. 3,154,171. Noise suppressing filter for microphone. **37**: 570—1965
Kochly, Joseph A. (see Arnold, James S.). **37**: 1171—1965
Kokesh, Frank P. 3,088,540. Acoustic velocity logging system. **37**: 212—1965
Kraft, Arthur A. 3,149,527. Key transposing harmonica. **37**: 403—1965
Kratz, Howard R. and Albert W. Blackstock. 3,137,171. Pressure transducer. **37**: 403—1965
Krilanovich, Joseph J. 3,154,996. Musical instrument. **37**: 1169—1965
Kuhn, James O. 3,154,995. Musical toy. **37**: 1168—1965
Kuhrt, Friedrich, Walter Engel, and Christian-Friedrich Wolf. 3,146,318. Sound-track reproducer for motion-picture projectors. **37**: 206—1965
—— **and Gustav Stark.** 3,163,721. Transducer for magnetic recordings. **37**: 962—1965
Kump, Herbert J. 3,156,784. Magnetic eraser. **37**: 572—1965
Kunz, Jacob G. 3,139,855. Bells. **37**: 207—1965
Kunz, Jacob T. 3,148,576. Musical instrument. **37**: 574—1965
Kuris, Arthur (see Balamuth, Lewis). **37**: 206—1965
Kurtze, Günther. 3,141,520. Sound absorber for gas conduits. **37**: 209—1965
—— (see Watters, Bill G.). **37**: 568—1965

L

Lahti, Uolevi L. 3,135,349. Loudspeaker. **37**: 1164—1965
Lamb, Reginald T. 3,139,489. Tape stabilizing means. **37**: 570—1965
Landrum, Ralph A., Jr., Samuel T. Martner, and Joseph D. Eisler. 3,108,250. Seismic record synthesis. **37**: 214—1965
Lane, Richard N. and James J. Moore. 3,144,089. Exposure meter. **37**: 400—1965
Langevin, Robert Z. 3,134,075. Hand-held self-contained microphone transmitter. **37**: 206—1965
Larsen, Hugh W. 3,037,573. Shaft vibration dampening. **37**: 1170—1965
Lawrence, Joseph L. (see Puharich, Henry K.). **37**: 569—1965
Lawrence, Philip L. 3,076,176. First break controlled inverse seismic filtering. **37**: 210—1965
—— **and Manus R. Foster.** 3,076,177. Elimination of instrumentation distortion. **37**: 211—1965
Legrand, Roger. 2,951,365. Ultra-sonic apparatus for the detection of defects in railway rails. **37**: 775—1965
Lemelson, Jerome H. 3,154,890. Ultrasonic tool. **37**: 1170—1965
Lewis, Ewart Gordon, Dennis Arthur George Eldridge, Geoffrey Bradfield, and Hastings Charles Maxim Bertoya. 2,971,372. Ultrasonic testing apparatus. **37**: 776—1965
Lindermeier, Franz. 3,145,608. Mouthpiece operated wind musical instrument with piano keyboard. **37**: 574—1965
Link, Charles J. (see Polly, Orville L.). **37**: 967—1965
Lirette, Edward F. 3,120,876. Air intake silencer. **37**: 208—1965
Litke, Ray A. 3,134,074. Microphone transmitter having a lavalier type antenna. **37**: 206—1965
Lockhart, Harry H. 3,148,343. Variable ultrasonic delay line. **37**: 772—1965
Loewe, Siegmund. 3,155,334. Magnetic sound recording and reproducing apparatus. **37**: 960—1965
Loos, Horst Rudolf. 2,984,098. Devices for non-destructive ultrasonic testing of material. **37**: 964—1965
Loro, Alberto and George Victor Planar. 3,138,850. Method of making a transducer element. **37**: 402—1965
Ludlow, Edmund. 3,104,733. Sound attenuating gas pipe. **37**: 404—1965
—— 3,112,008. Sound attenuating resonator. **37**: 406—1965
—— **and Benjamin H. Irwin.** 3,104,734. Sound attenuating gas pipe. **37**: 404—1965
—— **and Benjamin H. Irwin.** 3,104,735. Sound attenuating gas pipe. **37**: 404—1965
—— **and Benjamin H. Irwin.** 3,104,736. Sound attenuating gas pipe. **37**: 404—1965
—— **and Benjamin H. Irwin.** 3,110,358. Sound attenuating gas conduit. **37**: 405—1965
—— **and Benjamin H. Irwin.** 3,112,007. Silencing element for exhaust gas conduit. **37**: 406—1965
—— **and Benjamin H. Irwin.** 3,114,432. Sound attenuating gas conduit. **37**: 406—1965
—— **and Benjamin H. Irwin.** 3,118,517. Sound attenuating gas conduit. **37**: 407—1965
—— **and Benjamin H. Irwin.** 3,119,459. Sound attenuating gas conduit. **37**: 407—1965
—— **and Benjamin H. Irwin.** 3,128,841. Sound attenuating gas conduit and resonators therefor. **37**: 407—1965
——, **Benjamin H. Irwin, and John C. Brighton.** 3,104,732. Acoustically treated gas pipe. **37**: 404—1965
Lundgren, Don Le Roy (see Murphy, John Joseph). **37**: 772—1965
Luth, Harold J. 3,160,716. Transducer. **37**: 1165—1965
Lyons, Philip D. 3,139,490. Sound reproducing and recording device. **37**: 1164—1965

M

Mabuchi, Shigeaki. 3,141,919. System for generating rhythm tones. **37**: 403—1965

Maki, Charles E. 3,015,229. Apparatus for use in a vibration testing system. **37**: 575—1965
Marder, Michael. 3,149,525. Music box. **37**: 773—1965
Maropis, Nicholas (see Jones, James Byron). **37**: 777—1965
Marrs, Ralph E. 3,155,977. Resilient recording disk. **37**: 961—1965
Martner, Samuel T. (see Landrum, Ralph A., Jr.). **37**: 214—1965
Maxey, Alexander Rainey. 3,159,501. Magnetic tape apparatus. **37**: 961—1965
Mayo, Kenneth E. (see Hayner, Paul F.). **37**: 961—1965
Mazzagatti, Roy P. (see Savage, Kerry D.). **37**: 213—1965
McAuley, James W. 3,145,312. High frequency sonic transducers. **37**: 573—1965
McCarty, John O. and Ellis H. Bryant, Jr. 3,161,729. Temperature announcing machine. **37**: 962—1965
McCoy, Benjamin F. (see Alexander, Warren A.). **37**: 214—1965
McLeod, Bruce A. 2,974,198. Random signal generator. **37**: 775—1965
McNaney, Joseph T. 3,154,700. Piezoelectric transducer force to motion converter. **37**: 963—1965
Meyer, Edward F. 3,155,778. Teaching apparatus using sound recording. **37**: 572—1965
Miller, Ross Jay. 3,154,013. Sonic pulse generator. **37**: 1172—1965
Miller, Thomas P., Solly L. Fudaley, and Raymond N. Reinertson. 3,105,877. Circuit for canceling oscillating in public address systems. **37**: 206—1965
Moffatt, Robert Sydney Martin and Kenneth Storer. 3,002,375. Ultrasonic test apparatus. **37**: 964—1965
Moore, Armistead M. 3,065,454. Selective mixing of seismic signals. **37**: 210—1965
Moore, Charles A. 3,097,265. Simplified communication system. **37**: 206—1965
Moore, James J. (see Lane, Richard N.). **37**: 400—1965
Moreau, Rene. 3,092,206. Internal combustion engine silencers. **37**: 208—1965
Morgan, Willard L. (see Slayter, Games). **37**: 405—1965
Morley, Richard E. (see Pearson, Robert T.). **37**: 572—1965
Mulchi, Royce L. 3,153,970. Aid for stringed instruments. **37**: 1167—1965
Murphy, John Joseph and Don Le Roy Lundgren. 2,935,706. Electromechanical filter assemblage. **37**: 772—1965
Musser, Clair O. 3,138,986. Vibraphone. **37**: 207—1965
Myers, Charles R. and Frank K. Hedler. 3,098,519. Acoustically sealed track system for movable partitions. **37**: 771—1965

N

Nagaoka, Kazuo. 3,145,894. Magnetic recorder. **37**: 571—1965
Nallinger, Friedrich K. H. 3,112,810. Noise-deadening motor vehicle construction. **37**: 406—1965
Neitzel, Edwin B. 3,078,947. Seismic exploration method. **37**: 211—1965
Nelligan, James H. 3,156,068. Return top having conical apertures for producing sound. **37**: 1163—1965
Netznik, Frederick P. 3,163,720. Magnetic head. **37**: 962—1965
Neubauer, Werner G. 3,160,224. Sound velocity meter. **37**: 1171—1965
Niederman, Bernard and Rudolph L. Pohanka. 2,999,989. Electro-mechanical filter. **37**: 959—1965
Noiseux, Denis Ulderic. 3,154,170. Method of and apparatus for calibrating vibratory signals. **37**: 569—1965
Noshiro, Ritsuko. 3,165,595. Magnetic recording and reproducing device. **37**: 963—1965

O

Olson, Harry F. 2,983,790. Electronic sound absorber. **37**: 771—1965

P

Padera, Robert F. 3,147,661. Cymbal device. **37**: 573—1965
Pastore, Don (see Ditzel, Russel). **37**: 774—1965
Pearson, Robert T. and Richard E. Morley. 3,148,362. Magnetic recorder and reproducer. **37**: 572—1965
Peavey, Hartley D. 3,151,699. Portable sounding apparatus. **37**: 1164—1965
Percival, William Spencer. 3,055,980. Improvements relating to reproduction arrangements for stereophonic sound systems. **37**: 772—1965
Perkins, Leonard, Cyril Henry Stevens, and Alan Philip Craven Thiele. 3,160,834. Magnetostrictive electromechanical transducers. **37**: 1163—1965
Peterson, Richard H. 3,097,253. Electronic musical instrument. **37**: 1168—1965
Peterson, Robert E. 3,130,700. Vibration and mechanical wave damping. **37**: 1163—1965
Petrie, Adelore F. 3,130,811. Loudspeaker cone suspension. **37**: 1163—1965
—— 3,154,173. Loudspeaker cone suspension. **37**: 1165—1965
Pfost, Robert F. (see King, John W.). **37**: 962—1965
Phelan, Milton V. 3,109,510. Exhaust muffler. **37**: 405—1965
Piasecki, Frank N. 3,159,806. High speed tow sonar system. **37**: 1171—1965
Pierce, John R. (see David, Edward E., Jr.). **37**: 575—1965
Pijls, Hermanus Stephanus Josephus and Ulrich Ernst Enz. 3,148,289. Ultrasonic transducer. **37**: 773—1965
Planar, George Victor (see Loro, Alberto). **37**: 402—1965
Platt, Harold S. 3,081,838. Method and apparatus for minimizing cavity effects in acoustic logging. **37**: 211—1965
Platzman, Paul M. 3,160,138. High intensity sound generator. **37**: 1166—1965
Pohanka, Rudolph L. (see Niederman, Bernard). **37**: 959—1965
Polly, Orville L., Charles J. Link, Bernard Farmen, and Larry A. Pyatt. 3,150,346. Underwater transducer. **37**: 967—1965
Posakony, Gerald J. (see Howry, Douglass H.). **37**: 773—1965
Powers, Walter H. 3,092,204. Silencer. **37**: 404—1965
Prestia, Michael J. 3,087,577. Ceiling tile with sound attenuating and visual effects. **37**: 770—1965
Puharich, Henry K. and Joseph L. Lawrence. 3,156,787. Solid state hearing system. **37**: 569—1965
Pyatt, Larry A. (see Polly, Orville, L.). **37**: 967—1965
Pyke, Peter John. 3,151,221. Gramophone pick-ups. **37**: 402—1965

R

Rabalais, Gordon J. (see Andries, Francis M.). **37**: 569—1965
Rayfield, Harry F. 3,132,787. Magnetic tape drive mechanism. **37**: 570—1965
Recupito, Kenneth J. 3,111,192. Muffler apparatus. **37**: 406—1965
Redmond, John G. 3,153,365. Apparatus to teach music. **37**: 774—1965
Reed, George A. and Dexter Rosen. 3,087,578. Acoustical cabinet for office business machines. **37**: 774—1965
Reed, Robert D. (see Zink, John S., Jr.). **37**: 404—1965
Rees, Willis M. (see Slayter, Games). **37**: 771—1965
Reinertson, Raymond N. (see Miller, Thomas P.). **37**: 206—1965

Reinhart, David A. (see Feistman, Myron L.). **37**: 966—1965
Rettinger, Michael and Carl N. Shipman, Jr. 2,986,228. Miniature reverberation chamber system. **37**: 1162—1965
Rich, Stanley R. 3,141,071. Full range electroacoustic transducers. **37**: 401—1965
—— 3,164,221. Low frequency loudspeaker system. **37**: 1165—1965
Richard, Joseph D. 3,148,618. Underwater signaling apparatus. **37**: 967—1965
Rieth Harold F. 3,157,152. Transducing system. **37**: 1163—1965
Rocha, Henrique A. F. 2,957,340. Ultrasonic image detector. **37**: 776—1965
Rogers, Robert E. 3,030,056. Vibration mount for compressors and the like. **37**: 1170—1965
Roman, Robert J. 3,165,593. Sound drive system. **37**: 1166—1965
Rosen, Dexter (see Reed, George A.). **37**: 774—1965
Ross, James A. 3,152,270. Two pole transducer. **37**: 966—1965
Ross, Russel. 3,141,370. Cymbal and sizzle combination. **37**: 403—1965
Rupard, John N. 3,140,359. Plural track tape recorder. **37**: 570—1965
Russell, Robert G. (see Slayter, Games). **37**: 405—1965
Rutter, Donald E. 3,156,919. Electromagnetic transducer head. **37**: 961—1965
Ryan, John W. 3,153,364. Toy musical instrument. **37**: 773—1965

S

Sabine, Hale J. 2,990,027. Composite sound absorber. **37**: 1162—1965
Sage, Walter P. 3,150,555. Beater for drums. **37**: 773—1965
Sanders, Guy J. 3,114,431. Noise attenuating apparatus of circular cross-section. **37**: 208—1965
Santi, Harris Herman. 3,095,940. Acoustical vibrato apparatus. **37**: 1167—1965
Santini, Vincent. 3,145,609. Multi-resonator accordion. **37**: 207—1965
Santos, Frederico R. 3,096,489. Tuning fork tone generator. **37**: 1168—1965
Sarrafian, George P. (see Aitken, Alexander R.). **37**: 210—1965
Savage, Kerry D., Roy P. Mazzagatti, and Gerhard Herzog. 3,102,992. Simultaneous plural spacing acoustical logging. **37**: 213—1965
Scarpa, Thomas J. 3,140,859. Electroacoustic sandwich transducers. **37**: 573—1965
Schelf, Joseph A. 3,121,469. Exhaust diffuser and silencer for inboard motor boats. **37**: 209—1965
Schenkel, Gerrit and Jacob Izaak DeHaan. 3,141,070. Electrodynamic microphone. **37**: 401—1965
Schneider, William P. 3,093,811. Well logging systems. **37**: 212—1965
Scott, Hermon H. 3,163,254. Demountable curtained grill for acoustic loudspeaker enclosure and the like. **37**: 1165—1965
Sears, Garold D. and Patrick M. Sullivan. 3,143,182. Sound reproducers. **37**: 1164—1965
Sechrist, Edward L. 3,160,225. Sound reproduction system. **37**: 1165—1965
Seeler, Charles E. 3,132,713. Microphone diaphragm. **37**: 205—1965
Septer, Leslie E. 3,015,093. Electro-acoustical warning device. **37**: 1163—1965
Shaw, James C. (see Boswell, Vance F.). **37**: 214—1965
Sheldon, Edward Emanuel. 3,013,170. Device for reproducing acoustic images. **37**: 1172—1965
Shipman, Carl N., Jr. (see Rettinger, Michael). **37**: 1162—1965
Showalter, Edward W., Jr. 3,148,439. Method of making a commutator strip plate. **37**: 967—1965
Skelton, Jesse D., Philip S. Williams, and John T. Baker. 3,076,175. Geophysical exploration. **37**: 210—1965
Slayter, Games, Willis M. Rees, and Jack T. Feid. 3,092,203. Sound absorbing fibrous board with plastic film covering. **37**: 771—1965
——, **Robert G. Russell, and Willard L. Morgan.** 3,109,511. Muffler liner. **37**: 405—1965
Smith, George P. 3,143,027. Musical control device. **37**: 574—1965
Smith, Preston W., Jr., and Miguel C. Junger. 2,998,723. Sonic wave conductor. **37**: 966—1965
Solomon, Joseph M. (see Dymski, Donald A.). **37**: 401—1965
Spain, Robert F. (see Diamond, Milton J.). **37**: 966—1965
Sparks, Neil R. (see Geyer, Robert L.). **37**: 212—1965
Sproule, Donald Orr. 2,969,671. Ultrasonic flaw detecting apparatus. **37**: 776—1965
—— 2,972,096. Ultrasonic flaw detecting apparatus. **37**: 776—1965
Stahl, Raymond A. 2,996,611. Acoustic modulator. **37**: 960—1965
Stamps, George M. 3,156,766. Sonar telescriber. **37**: 1170—1965
Stanley, Robert S. (see Heintz, Karl O.). **37**: 212—1965
Stanton, Walter O. 3,146,319. Magnetic phonograph pickup with compensating pole piece arrangement. **37**: 402—1965
Stark, Gustav (see Kuhrt, Friedrich). **37**: 962—1965
Stavig, Arthur C. 3,157,000. Noise-making paddle. **37**: 1166—1965
Steinberger, Raymond L. and Charles L. Darner. 3,144,632. Sonar wake detector. **37**: 576—1965
Stevens, Cyril Henry (see Perkins, Leonard). **37**: 1163—1965
Storer, Kenneth (see Moffatt, Robert Sydney Martin). **37**: 964—1965
Straka, Oldřich (see Dubský, Bořivoj). **37**: 965—1965
Stram, Harold E. 3,142,927. Sonic fish bait. **37**: 576—1965
Straub, Wolfgang (see Bammesberger, Karl). **37**: 773—1965
Sullivan, Patrick M. (see Sears, Garold D.). **37**: 1164—1965
Summers, Gerald C. 3,082,837. Acoustic bore hole logging systems and apparatus. **37**: 211—1965

T

Tehon, Stephen W. 2,988,714. Piezoelectric filter network. **37**: 959—1965
Tennyson, James Joseph. 3,146,849. Method and apparatus for acoustically silencing high velocity gases. **37**: 775—1965
Thaler, Edward. 3,136,382. Acoustic transducer. **37**: 1164—1965
Thiele, Alan Philip Craven (see Perkins, Leonard). **37**: 1163—1965
Tibbetts, George C. 3,154,172. Diaphragm and impedance means. **37**: 960—1965
—— 3,164,686. Electrodynamic transducer. **37**: 1165—1965
Tibbetts, Wilbur E. 3,155,949. Tunnel erase magnetic transducer. **37**: 961—1965
Tibolla, Julius F. (see Cook, Edward G.). **37**: 1169—1965
Todisco, Carmine V. 3,142,353. Speaker enclosure. **37**: 1164—1965
Tomcik, Daniel J. 3,098,888. Electrical musical instrument. **37**: 1168—1965

Tomes, Sidney R. 3,139,544. Magnetostrictive sensing devices. **37**: 407—1965
Trainor, Charles C. 3,156,770. Method and apparatus for selectively controlling sound emission. **37**: 1165—1965
Turner, Edwin E. 3,065,463. Doppler navigation systems. **37**: 408—1965

U

Uchihara, George S. 2,994,078. Engine noise simulator. **37**: 964—1965
Umile, Louis J. and William J. Fitzgerald. 3,007,111. Vibrating reed comb assembly. **37**: 964—1965

V

van der Burgt, Cornelis Martinus. 2,991,400. Ultrasonic transducer. **37**: 963—1965
van Gerwen, Petrus Josephus. 3,142,727. Speech signal transmission system. **37**: 575—1965
van Stocker, Selmer G. 2,956,185. Universal ultrasonic sending and receiving apparatus. **37**: 775—1965
—— (see Cline, Charles W.). **37**: 775—1965
Vaughn, Elijah J. 3,156,771. Telephone loud-speaker combination. **37**: 572—1965
Vaughn, Hubert S. 3,111,190. Marine engine muffler. **37**: 405—1965

W

Wade, Albert L. 3,106,982. Method and apparatus for creating a seismic source. **37**: 214—1965
Wade, Elmer J. (see Flowers, John W.). **37**: 215—1965
Wadsworth, William B. 3,134,456. Wide range communication and sound attenuation device. **37**: 400—1965
Walker, Charles W. E. 2,964,107. Noise reducing means for high speed perforated surfaces. **37**: 774—1965
Walker, Ray A. (see Worlton, Daniel C.). **37**: 965—1965
Wandell, Wilbur H., Jr. (see Knutson, Oliver J.). **37**: 570—1965
Watters, Bill G. 3,087,574. High acoustic transmission loss panel and the like. **37**: 569—1965
—— **and Guenther Kurtze.** 3,087,570. Panel and the like of high acoustic transmission loss. **37**: 568—1965
—— (see Baruch, Jordan J.). **37**: 568, 770—1965
Weingartner, Bernhard. 3,157,750. Dynamic headphone. **37**: 573—1965
Welkowitz, Walter. 3,020,759. Ultrasonic flowmeter. **37**: 1170—1965
Wessels, Johannes Hendrik. 3,152,223. Magnetic recording of video signals with means for providing a co-phase check. **37**: 960—1965
Whitlock, Bruce N. (see Whitney, William G.). **37**: 571—1965
Whitlock, Wayne (see Whitney, William G.). **37**: 571—1965
Whitney, William G., Wayne, and Bruce N. Whitlock. 3,145,268. Multi-track record-reproduce system with servo controlled track selector. **37**: 571—1965
Whitworth, Singleton R. 3,140,360. Multi-channel tape recorder and playback apparatus. **37**: 570—1965
Wiegand, David E. 3,164,684. Transducer system and method. **37**: 963—1965
Wilcox, Robert L. (see Alexander, Warren A.). **37**: 212—1965
Williams, Frank K. 2,985,018. Vibration wave distance measuring device. **37**: 965—1965
Williams, Philip S. (see Skelton, Jesse D.). **37**: 210—1965
Wilson, Donald R. 3,168,934. Acoustic apparatus. **37**: 960—1965
Witzell, Warren E. (see Knott, Sydney T.). **37**: 577—1965
Wolf, Christian-Friedrich (see Kuhrt, Friedrich). **37**: 206—1965
Wolff, Joachim. 3,152,661. Electro-acoustic apparatus. **37**: 1166—1965
Wootten, William A. 3,165,594. Method of and apparatus for transporting linear elements. **37**: 963—1965
Worlton, Daniel C. 2,995,925. Ultrasonic flaw detection method and means. **37**: 965—1965
—— **and Ray A. Walker.** 3,153,850. Method and device for controlling ultrasonic welding apparatus. **37**: 965—1965
Wreford, Frederick S. 3,137,837. Ultrasonic power meter. **37**: 407—1965
Wright, Holden P. 3,146,412. Variable ultrasonic delay line. **37**: 772—1965
Wright, William M. 3,135,838. Electrostatic loudspeaker. **37**: 1164—1965
Wroby, John Stan. 2,939,720. Road noise isolation means for a motor vehicle suspension support. **37**: 777—1965

Z

Zarcone, Jerome and Rudolph R. Kleiner. 3,151,518. Drum beater head. **37**: 773—1965
Zeman, Frank (see Hogan, John W.). **37**: 961—1965
Zink, John S., Jr., Orville P. Edwards, Robert P. Duncan, and Robert D. Reed. 2,964,121. Muffler for gaseous fuel aspirator. **37**: 404—1965

Analytic Subject Index to Volume 37

Numerals in boldface indicate volume number. (T)'s designate title only.

0 GENERAL, UNCLASSIFIED

0.1 Errata

Central periodicity pitch [J. Acoust. Soc. Am. **37**, 136–138 (1965)]. Philip C. Nieder and C. Douglas Creelman. **37**: 749—1965

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0.2 Conferences, Lectures, and Announcements, not of the Acoustical Society of America

Acoustical societies and groups abroad. **37**: 543—1965

Architectural acoustics measurements. **37**: 762—1965

ASME Underwater Technology Conference. **37**: 1157—1965

Calendar of meetings abroad. **37**: 187, 398, 544, 767, 939, 1160—1965

Central Institute for the Deaf celebrates fiftieth anniversary. **37**: 761—1965

Conference on Acoustics of Solid Media. **37**: 186—1965

Czechoslovak National Conference on Ultrasonics, 24–26 August 1965. **37**: 1159—1965

Vth International Congress on Acoustics: invited papers announced. **37**: 767—1965

Vth International Congress on Acoustics—second announcement. **37**: 397—1965

Fifth U. S. National Congress of Applied Mechanics. **37**: 1157—1965

First International Piano Congress (Europiano Kongress Berlin 1965). **37**: 766—1965

First Latin American Symposium on Acoustics. **37**: 1160—1965

Fourth Czechoslovak Acoustical Conference. Ing. Jiří Struska. **37**: 766—1965

IEEE Group on Sonics and Ultrasonics meets. **37**: 762—1965

International Symposium on Ultrasonic Diagnostics in Ophthalmology. Peter Eisenberg. **37**: 542—1965

NASA develops new aluminum phosphate acoustical material. **37**: 762—1965

New appointments for German acoustical scientists. **37**: 766—1965

1965 Research Conference on Instrumentation Science. **37**: 936—1965

Pennsylvania State University announces short courses on applied mechanics and materials science. **37**: 761—1965

P. H. Parkin receives Wolfe Award. **37**: 1159—1965

Program on viscoelasticity held at Purdue. **37**: 1157—1965

Radio Science features "waves in plasma" papers. **37**: 181—1965

II International Symposium on Ultrasonic Testing of Materials. **37**: 939—1965

Ships named for acousticians. **37**: 1156—1965

Shock Tube Symposium. **37**: 540—1965

Space Research Technology Conference Report now available. **37**: 540—1965

Standard carpet for impact-noise transmission testing. **37**: 1156—1965

Stanley A. Peterson elected Chairman, Navy Underwater Sound Advisory Group. **37**: 935—1965

Summer course in Techniques in Oceanographic Instrumentation. **37**: 937—1965

Summer courses at The University of Michigan. **37**: 540—1965

Symposium on Gaseous Propagation. **37**: 187—1965

Symposium on Molecular Relaxation Processes. **37**: 939—1965

Symposium on Noise and Loading Actions on Helicopter V/STOL Aircraft and Ground-Effect Machines. **37**: 397—1965

Symposium on Ultrasound as a Diagnostic and Surgical Tool. **37**: 186—1965

Syracuse University offers new interdisciplinary academic programs. **37**: 937—1965

Translation of new 1965 Soviet journal. **37**: 538—1965

UCLA establishes fellowship. **37**: 538—1965

Underwater Detection Laboratory of Le Brusc. **37**: 939—1965

0.5 General Acoustics Notes

Letters to the Editor

A call for help on teaching experiments in acoustics. H. L. Armstrong. **37**: 1143—1965

Book Reviews

Elements of Acoustics. J. Blitz. (Reviewed by F. B. Stumpf.) **37**: 399—1965

Physical Acoustics: Principles and Methods. Volume I, Part B: Methods and Devices. Warren P. Mason, Editor. (Reviewed by F. V. Hunt.) **37**: 545—1965

News

Calendar of meetings abroad. **37**: 939—1965

Vth International Congress on Acoustics: invited papers announced. **37**: 767—1965

Fourth Czechoslovak Acoustical Conference. Ing. Jiří Struska. **37**: 766—1965
New appointments for German acoustical scientists. **37**: 766—1965
Proceedings of the Conference on Education in Acoustics. R. Bruce Lindsay. **37**: 357—1965
Report of the Acoustics Research Survey Committee. Richard K. Cook, Chairman, and George W. Wood, Secretary. **37**: 392—1965

Errata
Proceedings of the Conference on Education in Acoustics [J. Acoust. Soc. Am. **37**, 357–381 (1965); p. 361]. R. Bruce Lindsay. **37**: 758—1965
Report to the National Science Foundation on the Conference on Education in Acoustics [J. Acoust. Soc. Am. **36**, 2241–2243 (1964); p. 2242]. R. Bruce Lindsay. **37**: 758—1965

0.6 Biographical, Historical, and Personal Notes, not of the Acoustical Society of America

Abstracts
50 years of physical ultrasonics. Karl F. Herzfeld. **37**: 1203—1965

News
Acoustical scientists from abroad attend Austin Meeting of the Society. **37**: 186—1965
Harold R. Berlin 1896–1965. **37**: 1156—1965
New post for A. E. Crawford. **37**: 1159—1965
P. H. Parkin receives Wolfe Award. **37**: 1159—1965
Westley F. Curtis receives Navy Superior Civilian Service Award. **37**: 1156—1965

0.7 Editorials

Education in acoustics. R. Bruce Lindsay. **37**: 217—1965

1 ACOUSTICAL SOCIETY OF AMERICA

1.1 General, Unclassified

Proceedings of the Conference on Education in Acoustics. R. Bruce Lindsay. **37**: 357—1965

Errata
Proceedings of the Conference on Education in Acoustics [J. Acoust. Soc. Am. **37**, 357–381 (1965); p. 361]. R. Bruce Lindsay. **37**: 758—1965
Report to the National Science Foundation on the Conference on Education in Acoustics [J. Acoust. Soc. Am. **36**: 2241–2243 (1964); p. 2242]. R. Bruce Lindsay. **37**: 758—1965

1.5 Meetings

Acoustical scientists from abroad attend Austin Meeting of the Society. **37**: 186—1965
Author Index to papers presented at the 69th Meeting of the Acoustical Society of America. **37**: 1219—1965
Dates of future meetings of the Society. **37**: 182, 395, 541, 763, 938, 1158—1965
Rules and instructions for the preparation of abstracts of papers to be presented at meetings of the Acoustical Society of America. **37**: 182, 396, 541, 763, 937, 1157—1965
68th Meeting, 1964, Austin. Cyril M. Harris, President. **37**: 178—1965
Spring Meeting to offer special attractions for overseas members and visitors. **37**: 397—1965
The Sixty-Ninth Meeting of the Acoustical Society of America, Mayflower Hotel, Washington, D. C., 2–5 June 1965. **37**: 1173—1965

1.6 Members and Membership Lists

Announcement of forthcoming election. **37**: 176—1965
Arthur A. Regier 1909–1964. **37**: 538—1965
Bolt Beranek and Newman Inc. announces promotions. **37**: 539—1965
Charles E. Crede 1913–1964. Cyril M. Harris. **37**: 537—1965
Charles E. Green wins Presidential Citation. **37**: 538—1965
Charles R. Williams 1908–1964. **37**: 760—1965
David Taylor Model Basin names Alan Powell Head of Acoustics and Vibration Laboratory. **37**: 760—1965
Earle L. Kent honored. **37**: 538—1965
Erwin Meyer (receives Wallace Clement Sabine Award). M. R. Schroeder. **37**: 178—1965
Harold R. Berlin 1896–1965. **37**: 1156—1965
Horace Maynard Trent 1907–1964. R. Bruce Lindsay. **37**: 537—1965
IEEE honors Society members. **37**: 539—1965
Laurence Batchelder honored by ASA. **37**: 935—1965
New Fellows of the Acoustical Society of America. **37**: 391—1965
New post for A. E. Crawford. **37**: 1159—1965
Paul B. Flanders 1900–1965. Warren P. Mason. **37**: 935—1965
Revisions to membership list. **37**: 183, 763—1965
Richard Dudley Fay 1891–1964. **37**: 759—1965
Robert O. Fehr takes post abroad. **37**: 397—1965
Stanley A. Peterson elected Chairman, Navy Underwater Sound Advisory Group. **37**: 935—1965
Sustaining members. **37**: viii, vi, x, viii, viii, viii—1965
Warren P. Mason recipient of Arnold O. Beckham Award. **37**: 180—1965
W. D. Neff elected to National Academy of Sciences. **37**: 761—1965
Westley F. Curtis receives Navy Superior Civilian Service Award. **37**: 1156—1965

1.7 Committee Activities

Report of the Acoustics Research Survey Committee. Richard K. Cook, Chairman, and George W. Wood, Secretary. **37**: 392—1965
Standards notes. **37**: 181, 936—1965
Technical committees of the Society and their chairmen. **37**: 182, 395, 541, 762, 938, 1158—1965

1.8 Prizes, Medals, and Awards

Erwin Meyer (receives Wallace Clement Sabine Award). M. R. Schroeder. **37**: 178—1965

1.9 Regional Chapters

Regional Chapter notes. **37**: 181, 392, 761, 936—1965

2 ARCHITECTURAL ACOUSTICS

2.1 General, Unclassified

Papers

Thermal circuit approach to vibrations in coupled systems, and the noise reduction of a rectangular box. Ewald Eichler. **37**: 995—1965

Abstracts

Artificial reverberation: review and future outlook. M. R. Schroeder. **37**: 1192(T)—1965

Description of the acoustical laboratory at the University of California, Berkeley. George P. Wilson. **37**: 1189—1965

Interactions between electroacoustics and room acoustics. Erwin Meyer. **37**: 1192(T)—1965

Passive and active acoustics in architectural enclosures. Harry F. Olson. **37**: 1192(T)—1965

Reverberation control by assisted resonance. Harry R. Humphreys and Peter H. Parkin. **37**: 1192(T)—1965

Re-vision of the speech-privacy calculation. Robert W. Young. **37**: 1188—1965

News

Architectural acoustics measurements. **37**: 762—1965

2.2 Auditorium Design. (See also 7.6.)

Abstracts

Acoustical design of small rooms. Theodore J. Schultz and J. J. Figwer. **37**: 1202—1965

Acoustical design of the Los Angeles Pavilion. Paul S. Veneklasen, V. O. Knudsen, R. W. Leonard, and Jerry P. Christoff. **37**: 1202—1965

Acoustical modeling in architectural acoustics. Paul S. Veneklasen, Jose C. Ortega, Jerry P. Christoff, John Little, and Bonard Morse. **37**: 1188—1965

Acoustics of the Civic Centre Theatre, San Diego, California. Jack B. C. Purcell and Ewart A. Wetherill. **37**: 1202—1965

Problems presented by theatre-in-the-round. Dariel Fitzroy. **37**: 1202—1965

Provision for adequate loudness in recently built auditoria. Leslie L. Doelle. **37**: 1202—1965

2.3 Studies of Existing Auditoria and Acoustic Enclosures

Letters to the Editor

Gap between good acoustics for speech and for music. Albert R. Rienstra. **37**: 530—1965

Abstracts

Acoustical design of the Los Angeles Pavilion. Paul S. Veneklasen, V. O. Knudsen, R. W. Leonard, and Jerry P. Christoff. **37**: 1202—1965

Acoustics of the Civic Centre Theatre, San Diego, California. Jack B. C. Purcell and Ewart A. Wetherill. **37**: 1202—1965

Reverberation times and early energies in Philharmonic Hall (New York). B. S. Atal, M. R. Schroeder, G. M. Sessler, and J. E. West. **37**: 1188—1965

Sound reinforcement for the Los Angeles Pavilion. Paul S. Veneklasen. **37**: 1202—1965

2.4 Sound Absorption: Theory and Methods of Measurement of. (See also 2.5.)

Letters to the Editor

Selective attenuation of sound over seating and over grassland. W. E. Scholes. **37**: 756—1965

Abstracts

New standard for the field measurement of airborne transmission loss. Theodore J. Schultz. **37**: 1187—1965

2.5 Materials for Sound Absorption. Values of Absorption Coefficients and Acoustic Impedances

Papers

Effect of air space on the acoustic characteristics of uncoated and coated foams. Manuel Schwartz and Herbert D. Bradley, Jr. **37**: 278—1965

Patents

Acoustic absorber. Jordan J. Baruch and Bill G. Watters. **37**: 770—1965

Acoustical structure. William G. Kemp. **37**: 771—1965

Acoustic construction unit. Jordan J. Baruch and Bill G. Watters. **37**: 568—1965

Ceiling tile with sound attenuating and visual effects. Michael J. Prestia. **37**: 770—1965

Composite sound absorber. Hale J. Sabine. **37**: 1162—1965

Sound absorbers. Dominic D'Eustachio. **37**: 770, 771—1965

Sound absorbing fibrous board with plastic film covering. Games Slayter, Willis M. Rees, and Jack T. Feid. **37**: 771—1965

News

NASA develops new aluminum phosphate acoustical material. **37**: 762—1965

2.6 Noise Reduction by Increased Room Absorption

Abstracts

Description of the acoustical laboratory at the University of California, Berkeley. George P. Wilson. **37**: 1189—1965

2.7 Reverberation and Echoes. (See also 2.3, 2.4, 2.8, 2.9, 2.10, 11.2, 11.4, and 11.7.) Normal Modes in Rooms. Diffusivity. Frequency Response. Subjective Effects

Papers

Acoustic modes of a hemispherical room. J. L. Flanagan. **37**: 616—1965

Computed frequency and angular distribution of the normal modes of vibration in rectangular rooms. L. W. Sepmeyer. **37**: 413—1965

Interference patterns in reverberant sound fields. II. Richard V. Waterhouse and Richard K. Cook. **37**: 424—1965

Minimizing feedback in sound systems and room-ring modes with passive networks. C. P. Boner and Charles R. Boner. **37**: 131—1965

New method of measuring reverberation time. M. R. Schroeder. **37**: 409—1965

Letters to the Editor

Theory of howlback in reverberant rooms. Richard V. Waterhouse. **37**: 921—1965

Abstracts
Artificial reverberation: review and future outlook. M. R. Schroeder. **37**: 1192(T)—1965
Description of the acoustical laboratory at the University of California, Berkeley. George P. Wilson. **37**: 1189—1965
Interactions between electroacoustics and room acoustics. Erwin Meyer. **37**: 1192—1965
New method of measuring reverberation time. M. R. Schroeder. **37**: 1187—1965
Provision for adequate loudness in recently built auditoria. Leslie L. Doelle. **37**: 1202—1965
Reverberation control by assisted resonance. Harry R. Humphreys and Peter H. Parkin. **37**: 1192(T)—1965
Reverberation times and early energies in Philharmonic Hall (New York). B. S. Atal, M. R. Schroeder, G. M. Sessler, and J. E. West. **37**: 1188—1965
Sound-system correction of a church having severe focussed echoes. Charles R. Boner. **37**: 1188—1965
Stage-to-auditorium coupling for variable reverberation time. Jerry P. Christoff, Paul S. Veneklasen, and Myron Mann. **37**: 1188—1965

Patents
Miniature reverberation chamber system. Michael Rettinger and Carl N. Shipman, Jr. **37**: 1162—1965
Sound reproduction with artificial reverberation. Derk Kleis. **37**: 1163—1965

2.9 **Sound Transmission through Walls, Theory and Methods of Measurement of. (See also 2.10.)**

Papers
Approximation to the diffraction of sound by a circular aperture in a rigid wall of finite thickness. George P. Wilson and Walter W. Soroka. **37**: 286—1965
Impact-noise characteristics of female hard-heeled foot traffic. B. G. Watters. **37**: 619—1965
Measurement of the transmission loss of a finite-depth aperture. George P. Wilson. **37**: 298—1965

Abstracts
Effect of filter bandwidth and attenuation characteristics on sound-transmission-loss measurements. L. W. Sepmeyer and K. S. Oliphant. **37**: 1187—1965
Model experiments on sound transmission from engine room to accommodation in motorships. J. H. Janssen. **37**: 1190—1965
Subjective judgments of footstep transmission through floors. D. Olynyk and T. D. Northwood. **37**: 1187—1965

2.10 **Sound-Insulating Structures. Values of Transmission Coefficients. (See also 7.6.)**

Patents
Acoustically sealed track system for movable partitions. Charles R. Myers and Frank K. Hedler. **37**: 771—1965
High acoustic transmission loss panel and the like. Bill G. Watters. **37**: 569—1965
Panel and the like of high acoustic transmission loss. Bill G. Watters and Guenther Kurtze. **37**: 568—1965
Vibration and mechanical wave damping. Robert E. Peterson. **37**: 1163—1965

News
Standard carpet for impact-noise transmission testing. **37**: 1156—1965

2.12 **Damping of Panels**

Abstracts
Dual-phase damping material. G. E. Warnaka, Edward M. Kerwin, Jr., and Jaime R. Carbonell. **37**: 1215—1965

2.13 **Anechoic-Chamber Design. Wedges**

Patents
Cable floor structure with offset connectors. Oliver C. Eckel. **37**: 1163—1965

2.14 **Sound-Reinforcement Systems for Rooms**

Papers
Minimizing feedback in sound systems and room-ring modes with passive networks. C. P. Boner and Charles R. Boner. **37**: 131—1965

Abstracts
Artificial reverberation: review and future outlook. M. R. Schroeder. **37**: 1192(T)—1965
Interactions between electroacoustics and room acoustics. Erwin Meyer. **37**: 1192(T)—1965
Passive and active acoustics in architectural enclosures. Harry F. Olson. **37**: 1192(T)—1965
Provision for adequate loudness in recently built auditoria. Leslie L. Doelle. **37**: 1202—1965
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3 **BOOKS, BIBLIOGRAPHIES, AND SURVEYS**

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Physical Acoustics: Principles and Methods. Volume I, Part B: Methods and Devices. Warren P. Mason, Editor. (Reviewed by F. V. Hunt.) **37**: 545—1965
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3.3 Patents

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4 PHYSIOLOGICAL AND PSYCHOLOGICAL ACOUSTICS

4.1 General, Unclassified

News

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4.2 Anatomy and Physiology of the Ear

Papers

Auditory masking in the rat. George Gourevitch. **37**: 439—1965

Binaural interaction in the accessory superior-olivary nucleus of the cat. J. L. Hall, II. **37**: 814—1965

Binaural summation of the acoustic reflex. F. Blair Simmons. **37**: 834—1965

Distortion processes in the cochlear-microphonic response under normal and abnormal physiological conditions. David Wolsk. **37**: 647—1965

Some experimental observations on the dc resting potentials in the guinea-pig cochlea. Robert A. Butler. **37**: 429—1965

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Temporary shifts in auditory thresholds of chinchilla after exposure to noise. Edward N. Peters. **37**: 831—1965

Abstracts

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4.2.1 Middle-Ear Mechanics

Papers

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Abstracts

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4.2.2 Cochlear Mechanics

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Abstracts

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Subtitles

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Abstracts

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Abstracts

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Papers

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Use of noise to eliminate one ear from masking experiments. Peter B. Weston and James D. Miller. **37**: 638—1965

Letters to the Editor

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Abstracts

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Papers

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4.4.5 Auditory Fatigue, Temporary Threshold Shift

Papers

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Patents

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4.6 Loudness, Threshold Determinations

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4.7 Masking. (See also 5.5.)

Papers

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Abstracts

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4.9 Pitch. Absolute Pitch

Papers

Adjusting the method of adjustment: SD vs DL. B. L. Cardozo. **37**: 786—1965

Central periodicity pitch. Philip C. Nieder and C. Douglas Creelman. **37**: 136—1965

Detectability threshold for combination tones. R. Plomp. **37**: 1110—1965

Letters to the Editor

Effect of "aural harmonics" on frequency discrimination. G. Bruce Henning. **37**: 1144—1965

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4.13 Ear Acoustical Impedance

Papers

Pure-tone acuity and the intelligibility of everyday speech. J. D. Harris. **37**: 824—1965

4.14 Use of Ear Protectors, Earplugs

Abstracts

Evaluation of Air Force hearing data. Sanford E. Gerber and Ann Bien. **37**: 1174—1965
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Subtitles

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Patents

Ear protectors. Fred P. Beguin. **37**: 959—1965
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4.15 Perception of Signals

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Reevaluation of the effects of competing speech on aided discrimination of monosyllables. Wayne O. Olsen and Tom W. Tillman. **37**: 1205—1965
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Response latency as a criterion-dependent measure. Charles S. Watson. **37**: 1193—1965
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4.16 Vibration and Tactile Senses

Papers

Multiple cutaneous stimulation: The discrimination of vibratory patterns. Frank A. Geldard and Carl E. Sherrick. **37**: 797—1965
Temporal summation in vibrotactile sensitivity. R. T. Verrillo. **37**: 843—1965

Abstracts

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5 ACOUSTICAL INSTRUMENTS AND APPARATUS. (See also 2.8, 4.5, 9.6, 10.3, 12.3, 12.3p, 12.3z, 13.11, 13.11n, and 13.11t.)

5.1 General, Unclassified

Abstracts

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Patents

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5.3 **Acoustic-Impedance Measurement. (See also 11.5 and 12.3z.)**

Letters to the Editor

Construction of calculable high acoustic resistances. R. E. Bogner. **37**: 750—1965

Nomograms for computing real, imaginary, and absolute values of vector ratios. Howard S. Bowman. **37**: 751—1965

5.4 **Analyzers and Filters, Acoustic and Electric. Oscillographs. Acoustic Delay Lines and Resonators. (See also 5.15 and 12.3f.)**

Papers

Acoustic losses of a resonator with steady gas flow. Colin Gordon and P. W. Smith, Jr. **37**: 257—1965

Detection of a Doppler-invariant FM signal by means of a tapped delay line. R. O. Rowlands. **37**: 608—1965

50-msec electroacoustic delay line. Werner G. Neubauer. **37**: 1139—1965

Resonance–antiresonance of conducting piezoelectric resonators. G. Arlt. **37**: 151—1965

Letters to the Editor

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Abstracts

Effect of filter bandwidth and attenuation characteristics on sound-transmission-loss measurements. L. W. Sepmeyer and K. S. Oliphant. **37**: 1187—1965

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Subtitles

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Patents

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Magnetostrictive electro-mechanical transducers. Leonard Perkins, Cyril Henry Stevens, and Alan Philip Craven Thiele. **37**: 1163—1965

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Sound actuated toy. Thomas M. Johnson. **37**: 401—1965

Variable ultrasonic delay line. Harry H. Lockhart. **37**: 772—1965

Variable ultrasonic delay line. Holden P. Wright. **37**: 772—1965

5.5 **Audiometers. (See also 4.4 and 4.5.)**

Letters to the Editor

Re: Audiometric zero. E. C. Riley, J. H. Sterner, D. W. Fassett, and W. L. Sutton. **37**: 924—1965

Abstracts

Evaluation of Air Force hearing data. Sanford E. Gerber and Ann Bien. **37**: 1174—1965

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5.8 **Loudspeakers, Horns, Measurements. Practical Sound Sources. (See also 5.13, 5.17, and 5.18.)**

Abstracts

Direction pressure-gradient microphones for low frequencies. Bob R. Beavers. **37**: 1178—1965

Duality principle for horns. Robert W. Pyle, Jr. **37**: 1178—1965

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Some research features and capabilities of the Langley low-frequency noise facility. Philip M. Edge, Jr., and William H. Mayes. **37**: 1189—1965

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Patents

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Demountable curtained grill for acoustic loudspeaker enclosure and the like. Hermon H. Scott. **37**: 1165—1965

Direct radiator high fidelity loudspeaker. Sidney Herbstman. **37**: 1164—1965

Duplex loud speaker sound box system. Herbert J. Hopkins. **37**: 1164—1965

Electro-acoustical warning device. Leslie E. Septer. **37**: 1163—1965

Electrodynamic transducer. George C. Tibbetts. **37**: 1165—1965

Electrostatic loudspeaker. William M. Wright. **37**: 1164—1965

Full range electroacoustic transducers. Stanley R. Rich. **37**: 401—1965

High fidelity speaker mounting. Victor B. Glindmeyer. **37**: 1164—1965

Loudspeaker. Uolevi L. Lahti. **37**: 1164—1965

Loudspeaker arrangement. Derek Howell. **37**: 1165—1965

Loudspeaker cone suspension. Adelore F. Petrie. **37**: 1163, 1165—1965

Loud speaker enclosure. Raymon Dones. **37**: 1164—1965

Loud speaker structure. Aldo L. Coen. **37**: 1163—1965

Loudspeaker system. Robert C. Avedon. **37**: 1164—1965

Low frequency loudspeaker system. Stanley R. Rich. **37**: 1165—1965

Method and apparatus for selectively controlling sound emission. Charles C. Trainor. **37**: 1165—1965

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Pickup for musical instruments. Chauncey Richard Evans. **37**: 1165—1965

Portable sounding apparatus. Hartley D. Peavey. **37**: 1164—1965

Sound reproducers. Garold D. Sears and Patrick M. Sullivan. **37**: 1164—1965

Sound reproducing and recording device. Philip D. Lyons. **37**: 1164—1965

Sound reproduction system. Edward L. Sechrist. **37**: 1165—1965
Speaker cabinet. George Robert Kenney. **37**: 772—1965
Speaker enclosure. Herbert E. Bill. **37**: 1164—1965
Speaker enclosure. Carmine V. Todisco. **37**: 1164—1965
Transducer. Harold J. Luth. **37**: 1165—1965

5.9 **Microphones. Microphone-Calibration Equipment and Techniques. (See also 5.18, 12.3p, and 13.11t.)**

Papers
Theoretical analysis of the solion polarized cathode acoustic linear transducer. C. W. Larkam. **37**: 664—1965

Abstracts
Electrostatic microphones with foil electret. G. M. Sessler and J. E. West. **37**: 1209—1965
High-pressure low-frequency microphone calibration. Edward A. Starr. **37**: 1209—1965
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Radiation pressure calibration using torsion balance and spatial integration. Thomas D. Sachs. **37**: 1209—1965

Patents
Acoustic apparatus. Donald R. Wilson. **37**: 960—1965
Capacitor microphones. Rudolf Görike. **37**: 401—1965
Diaphragm and impedance means. George C. Tibbetts. **37**: 960—1965
Electro-acoustic apparatus. Joachim Wolff. **37**: 1166 1965
Electrodynamic microphone. Gerrit Schenkel and Jacob Izaak DeHaan. **37**: 401—1965
Hand-held self-contained microphone transmitter. Robert Z. Langevin. **37**: 206—1965
Method of and apparatus for calibrating vibratory signals. Denis Ulderic Noiseux. **37**: 569—1965
Microphone. Lee P. Hagey. **37**: 205—1965
Microphone diaphragm. Charles E. Seeler. **37**: 205—1965
Microphone transmitter having a lavalier type antenna. Ray A. Litke. **37**: 206—1965
Noise suppressing filter for microphone. Oliver J. Knutson, Armin E. Graber, and Wilbur H. Wandell, Jr. **37**: 570—1965

5.10 **Navigational Instruments Using Air Sound. Altitude-Measuring Instruments. Sound Ranging. (For Underwater Ranging see 13.11n.)**

Patents
Acoustic modulator. Raymond A. Stahl. **37**: 960—1965

5.13 **Sound-Reproducing Systems, Including Public-Address Systems, Stereophonic Reproduction**

Patents
Circuit for canceling oscillating in public address systems. Thomas P. Miller, Solly L. Fudaley, and Raymond N. Reinertson. **37**: 206—1965
Improvements relating to reproduction arrangements for stereophonic sound systems. William Spencer Percival. **37**: 772—1965

5.15 **Sound-Level Meters. Level Recorders. Sound-Pressure Measurement. (See also 5.4.)**

Abstracts
Equipment and techniques for noise measurements. Lewis S. Goodfriend. **37**: 1173—1965

5.16 **Sound Recording and Reproducing. General**

Abstracts
High-speed sound spectrograph. A. J. Prestigiacomo. **37**: 1210—1965

Book Reviews
The Encyclopedia of High Fidelity. John Borwick, Editor. (Reviewed by Harry F. Olson.) **37**: 188—1965

5.16d **Mechanical Recording and Reproducing**

Patents
Gramophone pick-ups. Peter John Pyke. **37**: 402—1965
Magnetic phonograph pickup with compensating pole piece arrangement. Walter O. Stanton. **37**: 402—1965
Phonograph reproducer. Charles C. Davis. **37**: 401—1965
Variable resistivity semiconductor amplifier phonograph pickup. Harold Bernstein. **37**: 402—1965

5.16f **Photographic Recording and Reproducing**

Patents
Sound drive system. Robert J. Roman. **37**: 1166—1965

5.16m **Magnetic Recording and Reproducing**

Patents
Audio instruction repeater. Carlos A. Irazoqui. **37**: 961—1965
Automatic recording tape splicer. John R. Durio. **37**: 572—1965
Electromagnetic transducer head. Donald E. Rutter. **37**: 961—1965
Electronic sound repeater mechanism. Carlos A. Irazoqui. **37**: 571—1965
Magnetic eraser. Herbert J. Kump. **37**: 572—1965
Magnetic head. Frederick P. Netznik. **37**: 962—1965
Magnetic head assembly. Donald F. Eldridge. **37**: 571—1965
Magnetic recorder. Walter Herterich. **37**: 570—1965
Magnetic recorder. Kazuo Nagaoka. **37**: 571—1965
Magnetic recorder and reproducer. Robert T. Pearson and Richard E. Morley. **37**: 572—1965
Magnetic record for video signals. Marvin Camras. **37**: 570—1965
Magnetic recording and reproducing device. Ritsuko Noshiro. **37**: 963—1965
Magnetic recording of video signals with means for providing a co-phase check. Johannes Hendrik Wessels. **37**: 960—1965
Magnetic sound recording and reproducing apparatus. Siegmund Loewe. **37**: 960—1965

Magnetic tape apparatus. Alexander Rainey Maxey. **37**: 961—1965
Magnetic tape drive mechanism. Harry F. Rayfield. **37**: 570—1965
Magnetic tape transport apparatus. Richard S. Anderson. **37**: 571—1965
Magnetic traducer head assemblies. George D. Cheney and Theodore C. Foster. **37**: 571—1965
Magnetic transducer. Marvin E. Anderson. **37**: 962—1965
Magnetic transducer. Kenneth R. Eldredge. **37**: 961—1965
Method and apparatus for superimposing an additional recording upon an existing sound record. Karl Bammesberger and Wolfgang Straub. **37**: 773—1965
Method of and apparatus for transporting linear elements. William A. Wootten. **37**: 963—1965
Method of producing magnetic heads with bonding glass gap spacers. Simon Duinker and Jules Bos. **37**: 571—1965
Mounting bracket for magnetic heads. John W. Hogan and Frank Zeman. **37**: 961—1965
Multi-channel tape recorder and playback apparatus. Singleton R. Whitworth. **37**: 570—1965
Multi-track record-reproduce system with servo controlled track selector. William G. Whitney, Wayne, and Bruce N. Whitlock. **37**: 571—1965
Plural track tape recorder. John N. Rupard. **37**: 570—1965
Resilient recording disk. Ralph E. Marrs. **37**: 961—1965
Rotary head position determining apparatus. John W. King and Robert F. Pfost. **37**: 962—1965
Sound tape magazine or the like. Karl Cech. **37**: 571—1965
Sound-track reproducer for motion-picture projectors. Friedrich Kuhrt, Walter Engel, and Christian-Friedrich Wolf. **37**: 206—1965
Suspension system for electromagnetic transducers. Dusan S. Gelletich. **37**: 572—1965
Tape recorder. Paul F. Hayner, Daniel Blitz, Kenneth E. Mayo, and Edgar R. Bernier. **37**: 961—1965
Tape stabilizing means. Reginald T. Lamb. **37**: 570—1965
Tape transporting means for a magnetic recorder. Alex H. Johnson. **37**: 570—1965
Teaching apparatus using sound recording. Edward F. Meyer. **37**: 572—1965
Temperature announcing machine. John O. McCarty and Ellis H. Bryant, Jr. **37**: 962—1965
Transducer for magnetic recordings. Friedrich Kuhrt and Gustav Stark. **37**: 962—1965
Transducer system and method. David E. Wiegand. **37**: 963—1965
Tunnel erase magnetic transducer. Wilbur E. Tibbetts. **37**: 961—1965
Ultra-low frequency recording. Joseph L. Collins. **37**: 962—1965

5.17 Telephones, Telephone Earphones. (See also 5.13.) Intercommunication Systems

Abstracts

Improving headphone listening comfort. B. B. Bauer. **37**: 1210—1965
Calibration and analysis of underwater earphones. B. B. Bauer and E. Torick. **37**: 1210—1965

Patents

Dynamic headphone. Bernhard Weingartner. **37**: 573—1965
Simplified communication system. Charles A. Moore. **37**: 206—1965
Telephone amplifier. James C. Kay. **37**: 402—1965
Telephone loud-speaker combination. Elijah J. Vaughn. **37**: 572—1965

5.18 Transducing Principles, Structures and Materials, General. (See also 5.8, 5.9, 5.17, 10.3, 12.3p, 13.7, and 13.11t.)

Papers

Acoustic-backing techniques for transducers and radiators. W. J. Toulis. **37**: 250—1965
Broad-band, thermally generated noise voltage of a resonant electroacoustic transducer. Paul M. Kendig. **37**: 847—1965
Diffraction constants of transducers. Robert J. Bobber. **37**: 591—1965
Theoretical analysis of the solion polarized cathode acoustic linear transducer. C. W. Larkam. **37**: 664—1965
Tuning resonant sound radiators to achieve a minimum acoustic *Q*. M. C. Junger and William Thompson, Jr. **37**: 95—1965

Letters to the Editor

Comments on "Acoustic-backing techniques for transducers and radiators," by W. J. Toulis. L. H. Royster. **37**: 1152—1965

Abstracts

Analysis of electroacoustical transducers by differential immittance techniques. Abraham I. Dranetz and Harvey Rathbun, Jr. **37**: 1177—1965
Broad-band thermally generated noise voltage of a resonant electroacoustic transducer. Paul M. Kendig. **37**: 1178—1965
Directivity of a transducer mounted inside a thin Shell. James E. Barger. **37**: 1178—1965
Electropneumatic acoustic generator. Walter T. Fiala, J. K. Hilliard, J. A. Renkus, and John J. Van Houten. **37**: 1177—1965
Generation of transient acoustic impulses, using a novel underwater spark sound source. R. A. Wagner and H. A. Wright. **37**: 1177—1965
Measuring and monitoring low-frequency space-vehicle noise. Ira Dyer. **37**: 1189—1965
Method for evaluating ultrasonic transducer loading effects on transit-time measurements. E. W. Kammer. **37**: 1177—1965
Relation of electromechanical coupling coefficients to the vibrations of piezoelectric plates. H. F. Tiersten. **37**: 1185(T)—1965
Some expressions for the electromechanical coupling factor. A. Mohammed. **37**: 1185(T)—965
Underwater-sound transducer with a conical-shell radiation pattern. D. R. Sanders. **37**: 1178—1965
Use of the effective electromechanical coupling factor in transducer design. R. S. Woollett. **37**: 1185(T)—1965

Patents

Diaphragm mounting for stethoscope. William L. Howell. **37**: 963—1965
High intensity sound generator. Paul M. Platzman. **37**: 1166—1965
Method of making a transducer element. Alberto Loro and George Victor Planar. **37**: 402—1965

Noise-making paddle. Arthur C. Stavig. **37**: 1166—1965
Transducer assembly. George E. Henry and Daniel I. Evans. **37**: 773—1965
Ultrasonic transducer. Hermanus Stephanus Josephus Pijls and Ulrich Ernst Enz. **37**: 773—1965
Uni-directional ultrasonic transducer. Douglass H. Howry and Gerald J. Posakony. **37**: 773—1965

5.18e **Electrostatic Transducers**

Abstracts
Electrostatic microphones with foil electret. G. M. Sessler and J. E. West. **37**: 1209—1965

Patents
Electrokinetic transducer. Thomas Townsend Brown. **37**: 1166—1965
Electrostatic transducer. George A. Brettell. **37**: 402—1965

5.18f **Magnetostrictive Transducers**

Abstracts
Effect of hydrostatic pressures on magnetostrictive vibrators. K. E. Feith and R. R. Whymark. **37**: 1217—1965

Patents
Electroacoustic transducer apparatus. Robert B. Blizard. **37**: 206—1965
High frequency sonic transducers. James W. McAuley. **37**: 573—1965
Magnetostrictive transducer. F[illegible] R. Abbott. **37**: 1167—1965
Magnification of the amplitude of magnetostrictive radial vibrations. Lewis Balamuth and Arthur Kuris. **37**: 206—1965
Ultrasonic transducer. Cornelis Martinus van der Burgt. **37**: 963—1965

5.18p **Piezoelectric Transducers, Ferroelectrics**

Papers
Broad-band, thermally generated noise voltage of a resonant electroacoustic transducer. Paul M. Kendig. **37**: 847—1965
Experimental liquid-filled transducer array for deep-ocean operation. Paul M. Kendig and Hugh J. Clarke. **37**: 99—1965
Resonance-antiresonance of conducting piezoelectric resonators. G. Arlt. **37**: 151—1965

Abstracts
Relation of electromechanical coupling coefficients to the vibrations of piezoelectric plates. H. F. Tiersten. **37**: 1185(T)—1965

Patents
Electroacoustic sandwich transducers. Thomas J. Scarpa. **37**: 573—1965
Mass-loaded electromechanical transducer. Donald R. Church and Miguel C. Junger. **37**: 207—1965
Method of bonding a crystal to a delay line. Richard E. Allen. **37**: 207—1965
Piezoelectric transducer force to motion converter. Joseph T. McNaney. **37**: 963—1965
Pressure transducer. Howard R. Kratz and Albert W. Blackstock. **37**: 403—1965

5.19 **Tuning Forks, Frequency Standards, Frequency-Measuring and -Recording Instruments. Time Standards. Chronographs**

Patents
Vibrating reed comb assembly. Louis J. Umile and William J. Fitzgerald. **37**: 964—1965

6 **MUSIC AND MUSICAL INSTRUMENTS**

6.1 **General, Unclassified**

Papers
Sound-power production in wind instruments. Arend Bouhuys. **37**: 453—1965

Abstracts
Psychological pitch scale: use in musical composition. Paul Pedersen and C. Douglas Creelman. **37**: 1203—1965

Patents
Tops with musical mechanism. Friedrich Fuchs. **37**: 1167—1965
Visual aid-association identification device. Moshe Gnatt. **37**: 1167—1965

News
First International Piano Congress (Europiano Kongress Berlin 1965). **37**: 766—1965

6.2 **Bells, Xylophones. Other Instruments Having Rigid Vibrators**

Patents
Bells. Jacob G. Kunz. **37**: 207—1965
Cymbal and sizzle combination. Russel Ross. **37**: 403—1965
Cymbal device. Robert F. Padera. **37**: 573—1965
Music box. Michael Marder. **37**: 773—1965
Toy musical instrument. John W. Ryan. **37**: 773—1965
Vibraphone. Clair O. Musser. **37**: 207—1965

6.3 **Brass Wind Instruments (Lip-Vibrated)**

Papers
Sound-power production in wind instruments. Arend Bouhuys. **37**: 453—1965

6.4 **Drums and Other Membranophonic Instruments**

Patents
Beater for drums. Walter P. Sage. **37**: 773—1965
Drum beater head. Jerome Zarcone and Rudolph R. Kleiner. **37**: 773—1965
Drum-stick. Arnold R. Brilhart. **37**: 573—1965

6.6 **Pianos and Other Keyboard Stringed Instruments**

Patents
Apparatus to teach music. John G. Redmond. **37**: 774—1965
Piano action. Howard K. Graves. **37**: 1167—1965

6.7 **Violin Family. Stringed Instruments, Except Keyboard Type**

Papers
Quality of violin, viola, 'cello, and bass-viol tones. I. Harvey Fletcher, E. Donnell Blackham, and O. Norman Geertsen. **37**: 851—1965

Abstracts
Bass violin and the seven-foot contrabass violin. Carleen M. Hutchins. **37**: 1203—1965

Patents
Adjustable neck construction for guitars and the like. Clarence L. Fender. **37**: 573—1965
Aid for stringed instruments. Royce L. Mulchi. **37**: 1167—1965
Bridge for stringed musical instruments. Russel Ditzel, Edward G. Ising, and Don Pastore. **37**: 774—1965
Chord forming device for string instruments. Richard Blohm. **37**: 1167—1965
Electric guitar. John F. Elmore. **37**: 1167—1965
Musical device. John Joslyn. **37**: 574—1965
True vibrato. Solon O. Boyd. **37**: 403—1965
Violin bow. Julien A. Bried. **37**: 574—1965
Violin power bow. Julien A. Bried. **37**: 207—1965

6.8 **Wood Winds**

Papers
Analysis of the flute head joint. A. H. Benade and J. W. French. **37**: 679—1965
Sound-power production in wind instruments. Arend Bouhuys. **37**: 453—1965

Abstracts
Measurements of clarinet resonance frequencies. John Backus. **37**: 1203—1965
Spectrum-envelope method for synthesis of oboe tones. William J. Strong. **37**: 1202—1965

6.9 **Electrical Musical Instruments**

Patents
Acoustical vibrato apparatus. Harris Herman Santi. **37**: 1167—1965
Electrical musical instrument. Daniel J. Tomcik. **37**: 1168—1965
Electric guitar incorporating pick-up means adapted to minimize beating effects. Clarence L. Fender. **37**: 207—1965
Electronic musical instrument. Richard H. Peterson. **37**: 1168—1965
Musical instrument. Jacob T. Kunz. **37**: 574—1965
Photoelectric tone generator. Thomas J. Buitkus. **37**: 1168—1965
System for generating rhythm tones. Shigeaki Mabuchi. **37**: 403—1965
Tone control circuit. Clarence L. Fender. **37**: 574—1965
Tone filters. John R. Brand and Joseph H. Hearne. **37**: 1168—1965
Tuning fork tone generator. Frederico R. Santos. **37**: 1168—1965

6.10 **Reed Organs. Accordions, Harmonicas**

Patents
Key transposing harmonica. Arthur A. Kraft. **37**: 403—1965
Mouthpiece operated wind musical instrument with piano keyboard. Franz Lindermeier. **37**: 574—1965
Multi-resonator accordion. Vincent Santini. **37**: 207—1965
Musical control device. George P. Smith. **37**: 574—1965
Musical toy. James O. Kuhn. **37**: 1168—1965

6.12 **Intonation. Vibrato. Musical Scales. Musical Composition**

Abstracts
Psychological pitch scale: use in musical composition. Paul Pedersen and C. Douglas Creelman. **37**: 1203—1965

Patents
Musical instrument. Joseph J. Krilanovich. **37**: 1169—1965

7 **NOISE AND NOISE CONTROL**

7.1 **General, Unclassified**

Papers
Feedback and noise-signal detection at three performance levels. Richard A. Campbell. **37**: 434—1965
Thermal circuit approach to vibrations in coupled systems, and the noise reduction of a rectangular box. Ewald Eichler. **37**: 995—1965
Vertical directionality of ambient noise in the deep ocean at a site near Bermuda. E. H. Axelrod, B. A. Schoomer, and W. A. Von Winkle. **37**: 77—1965

Abstracts
Acoustic power radiated by a source of sound in a duct. George C. Maling, Jr. **37**: 1196—1965
Change in simultaneous masking of short tones by narrow- and white-band noise bursts. Lois L. Elliott. **37**: 1180—1965
Control of noise by legislation. A. C. Pietrasanta. **37**: 1173—1965
Detection of auditory signals in restricted sets of reproducible noise. Sheila M. Pfafflin. **37**: 1193—1965
Effect of bandwidth of masking noise on detection of homophasic and antiphasic tonal signals. Walter T. Bourbon and Lloyd A. Jeffress. **37**: 1180—1965
Equipment and techniques for noise measurements. Lewis S. Goodfriend. **37**: 1173—1965
Estimating the acoustic loading on building structures near launch sites. Kenneth McK. Eldred and Louis C. Sutherland. **37**: 1189—1965
Industrial noise-control procedures. Leo L. Beranek. **37**: 1179—1965
Judged noisiness of a band of random noise containing an audible pure tone. K. D. Kryter and K. S. Pearsons. **37**: 1175—1965
Laboratory simulation of the response of structures exposed to intense acoustic environments. Daniel J. Bozich. **37**: 1197—1965
Masking of white noise by pure tones. I. M. Young and Claude Wenner. **37**: 1180—1965
Measurement of noise damage to community building near launch sites. Richard W. Peverley. **37**: 1189—1965
Measuring and monitoring low-frequency space-vehicle noise. Ira Dyer. **37**: 1189—1965
Some research features and capabilities of the Langley low-frequency noise facility. Philip M. Edge, Jr., and William H. Mayes. **37**: 1189—1965
Transmission of sound in a moving fluid. C. Hemond and T. Zadnik. **37**: 1196—1965

7.2 **Annoyance. Effect of Noise on Human Beings**

Papers

Effect of repetition rate on the loudness of triangular transients. N. L. Carter. **37**: 308—1965

Some preliminary studies of temporary threshold shift with an arc-discharge impulse-noise generator. M. Loeb, J. L. Fletcher, and R. W. Benson. **37**: 313—1965

Speech communications as limited by ambient noise. J. C. Webster. **37**: 692—1965

Temporal effects in simultaneous masking by white-noise bursts. Eberhard Zwicker. **37**: 653—1965

Use of noise to eliminate one ear from masking experiments. Peter B. Weston and James D. Miller. **37**: 638—1965

Abstracts

Criteria for noise exposure. Wayne Rudmose. **37**: 1173—1965

Hearing-conservation programs. Aram Glorig. **37**: 1179—1965

Judgments of the relative and absolute acceptability of aircraft noise. Dwight E. Bishop. **37**: 1175—1965

Physical and psychological effects of noise. Henning E. von Gierke. **37**: 1173—1965

7.4 **Community Noise**

Abstracts

Selection of an objective measure for motor-vehicle noise. W. J. Galloway. **37**: 1198—1965

Survey of the traffic-noise problem. George J. Thiessen. **37**: 1179—1965

Vehicular-traffic noise near high-speed highways. Jerome K. Brasch. **37**: 1197—1965

7.6 **Noise in Buildings. (See also 2.2.)**

Papers

Impact-noise characteristics of female hard-heeled foot traffic. B. G. Watters. **37**: 619—1965

Abstracts

Noise environment of restaurants. A. S. Harris and B. G. Watters. **37**: 1197—1965

Power-level criteria for noise control. Carlyle M. Ashley. **37**: 1188—1965

Re-vision of the speech-privacy calculation. Robert W. Young. **37**: 1188—1965

Subtitles

Noise in buildings. George P. Wilson. **37**: 300—1965

7.7 **Machinery Noise. Mufflers. Noise Silencers**

Papers

Aerodynamic sound from centrifugal-fan rotors. R. C. Chanaud. **37**: 969—1965

Hearing-loss trend curves and the damage-risk criterion in diesel-engineroom personnel. J. D. Harris. **37**: 444—1965

Abstracts

Ground-vehicle noise control. Stannard M. Potter and Thomas J. Newton. **37**: 1179—1965

Industrial noise-control procedures. Leo L. Beranek. **37**: 1179—1965

Instrumenting to identify noise sources in document-handling machinery. Roger H. Peterson. **37**: 1197—1965

Model experiments on sound transmission from engine room to accommodation in motorships. J. H. Janssen. **37**: 1190—1965

Noise control in air-handling systems. Guy Sanders. **37**: 1178—1965

Reduction of ships' noise by viscoelastic damping. Robert R. James. **37**: 1207—1965

Selection of an objective measure for motor-vehicle noise. W. J. Galloway. **37**: 1198—1965

Vehicular-traffic noise near high-speed highways. Jerome K. Brasch. **37**: 1197—1965

Patents

Acoustical barrier fence. Howard C. Hardy. **37**: 774—1965

Acoustical cabinet for office business machines. George A. Reed and Dexter Rosen. **37**: 774—1965

Acoustically treated gas pipe. Edmund Ludlow, Benjamin H. Irwin, and John C. Brighton. **37**: 404—1965

Adjustable muffler. Edward W. Bottum. **37**: 209—1965

Air intake silencer. Edward F. Lirette. **37**: 208—1965

Air mixing and sound attenuating chamber. Frank J. Dean, Jr. **37**: 774—1965

Air nozzle. Donald R. Brown. **37**: 1169—1965

Compressor muffler construction and method for muffling compressor discharge gases. Karl M. Gerteis. **37**: 405—1965

Exhaust diffuser and silencer for inboard motor boats. Joseph A. Schelf. **37**: 209—1965

Exhaust muffler. Milton V. Phelan. **37**: 405—1965

Internal combustion engine silencers. Rene Moreau. **37**: 208—1965

Marine engine muffler. Hubert S. Vaughn. **37**: 405—1965

Marine type muffler. Thomas N. Kelly. **37**: 208—1965

Muffler. Jarvis C. Buxton. **37**: 208—1965

Muffler. Robert A. Heath. **37**: 209—1965

Muffler apparatus. Kenneth J. Recupito. **37**: 406—1965

Muffler construction. John R. Carter. **37**: 405—1965

Muffler device. John Bachert. **37**: 406—1965

Muffler for gaseous fuel aspirator. John S. Zink, Jr., Orville P. Edwards, Robert P. Duncan, and Robert D. Reed. **37**: 404—1965

Muffler liner. Games Slayter, Robert G. Russel, and Willard L. Morgan. **37**: 405—1965

Noise attenuating apparatus of circular cross-section. Guy J. Sanders. **37**: 208—1965

Noise-deadening motor vehicle construction. Friedrich K. H. Nallinger. **37**: 406—1965

Noise reducing means for high speed perforated surfaces. Charles W. E. Walker. **37**: 774—1965

Pulsation snubber or silencer. Arthur P. Gallagher. **37**: 208—1965

Silencer. Walter H. Powers. **37**: 404—1965

Silencer or muffler. Floyd E. Deremer. **37**: 208—1965

Silencing element for exhaust gas conduit. Edmund Ludlow and Benjamin H. Irwin. **37**: 406—1965

Sound absorber for gas conduits. Günther Kurtze. **37**: 209—1965

Sound absorption device and method of manufacture. Helmut Kammerer and Fritz Knauber. **37**: 209—1965

Sound attenuating gas conduit. Edmund Ludlow and Benjamin H. Irwin. **37**: 405, 406, 407 (2 Patents)—1965

Sound attenuating gas conduit and resonators therefor. Edmund Ludlow and Benjamin H. Irwin. 37: 407—1965
Sound attenuating gas pipe. Edmund Ludlow. 37: 404—1965
Sound attenuating gas pipe. Edmund Ludlow and Benjamin H. Irwin. 37: 404 (3 Patents)—1965
Sound attenuating laminated pipe. James R. Dollens. 37: 1169—1965
Sound attenuating resonator. Edmund Ludlow. 37: 406—1965
Soundproof camera enclosures. Irving R. Hautala. 37: 774—1965

7.8 **Noise Generators (Solid, Liquid, and Gaseous). Sirens**

Papers
Some experiments concerning the hole and ring tone. R. C. Chanaud and Alan Powell. 37: 902—1965

Letters to the Editor
Noise spectrum of arc-plasma generators. Jay Burns and Henry Halle. 37: 383—1965

Abstracts
Electropneumatic acoustic generator. Walter T. Fiala, J. K. Hilliard, J. A. Renkus, and John J. Van Houten. 37: 1177—1965
Noise-generation mechanisms. H. S. Ribner. 37: 1173—1965

Subtitles
Noise generators. M. Loeb, J. L. Fletcher, and R. W. Benson. 37: 318—1965

Patents
Engine noise simulator. George S. Uchihara. 37: 964—1965
Mechanical sound-producing fire alarm device. Ruth Kaplan. 37: 574—1965
Method and apparatus for environmental noise generation. Albert G. Bodine. 37: 775—1965
Random signal generator. Bruce A. McLeod. 37: 775—1965

7.10 **Aerodynamic Noise. Jet Noise**

Papers
Aerodynamic sound from centrifugal-fan rotors. R. C. Chanaud. 37: 969—1965
Some experiments concerning the hold and ring tone. R. C. Chanaud and Alan Powell. 37: 902—1965

Abstracts
Aerodynamic noise from uncased centrifugal fan rotors. R. C. Chanaud. 37: 1197—1965
Estimating the acoustic loading on building structures near launch sites. Kenneth McK. Eldred and Louis C. Sutherland. 37: 1189—1965
Judgments of the relative and absolute acceptability of aircraft noise. Dwight E. Bishop. 37: 1175—1965
Manned-spacecraft habitability noise-control evaluation study. Meyer Lepor. 37: 1197—1965
Measurement of noise damage to community building near launch sites. Richard W. Peverley. 37: 1189—1965
Measuring and monitoring low-frequency space-vehicle noise. Ira Dyer. 37: 1189—1965
Some research features and capabilities of the Langley low-frequency noise facility. Philip M. Edge, Jr., and William H. Mayes. 37: 1189—1965

Patents
Method and apparatus for acoustically silencing high velocity gases. James Joseph Tennyson. 37: 775—1965

8 **STANDARDS**

8.1 **General, Unclassified**
Standards notes. 37: 181, 936—1965

9 **SPEECH COMMUNICATION**

9.1 **General, Unclassified**

Letters to the Editor
Method for training a speaker to phonate at a given fundamental frequency. Martin F. Schwartz. 37: 1147—1965

9.2 **Anatomy and Physiology of the Larynx and Vocal Tract**

Abstracts
Determination of smoothed cross-sectional-area functions of the vocal tract from formant frequencies. Paul Mermelstein and M. R. Schroeder. 37: 1186—1965
Lossfree twin-tube resonator and the vowel triangle of Hellwag. Hendrik Mol. 37: 1186—1965
Microtemporal synchronization system for ultrahigh-speed photography. Donald Dew and Paul Moore. 37: 1216—1965
Stroboscopic laminagraphy as a method in laryngeal research: preliminary data. Harry Hollien. 37: 1216—1965

9.3 **Acoustic Analysis of Speech**

Letters to the Editor
Measurement of speech spectra recorded with a close-talking microphone. Cyril M. Harris and William M. Waite. 37: 926—1965

Abstracts
Analysis-synthesis of glottal excitation. Sheldon B. Michaels, Henry I. Soron, William J. Strong, and Philip Lieberman. 37: 1186—1965
Determination of smoothed cross-sectional-area functions of the vocal tract from formant frequencies. Paul Mermelstein and M. R. Schroeder. 37: 1186—1965
Experiments in pitch detection. David E. Wood. 37: 1211—1965
Medium-bandwidth speech-compression device. C. F. Teacher and D. M. Jurenko. 37: 1199—1965
Monaural and binaural discrimination against competing sentences. Raymond Carhart. 37: 1205—1965
New spectrum analyzer for speech analysis. Ulf Rengman and Johan Liljencrants. 37: 1186—1965
Research towards a high-efficiency voice-communication system. Harry F. Olson, H. Belar, and Edward S. Rogers. 37: 1199—1965
Statistical basis for objective measurement of speech levels. Paul T. Brady. 37: 1186—1965
Technique for objective speech-level measurement. Peter D. Bricker. 37: 1185—1965
Variations in spoken-digit duration in a restricted environment. Kung-Pu Li and W. D. Chapman. 37: 1211—1965

9.4 **Speech Synthesis**

Letters to the Editor

Digitized voice-excited vocoder for telephone-quality inputs, using bandpass sampling of the baseband signal. Bernard Gold and Joseph Tierney. **37**: 753—1965

Vocal-response synthesizer. Caldwell P. Smith. **37**: 170—1965

Abstracts

Analysis–synthesis of glottal excitation. Sheldon B. Michaels, Henry I. Soron, William J. Strong, and Philip Lieberman. **37**: 1186—1965

Combinations of channel vocoders and formant vocoders. Bernard Gold. **37**: 1198—1965

Implementation of vocal-response synthesizer. V. D. Hogue. **37**: 1198—1965

Matching speech cineradiography with pseudospeech. H. M. Truby. **37**: 1187—1965

Medium-bandwidth speech-compression device. C. F. Teacher and D. M. Jurenko. **37**: 1199—1965

Novel vocoder synthesizer. Caldwell P. Smith and S. W. Helms. **37**: 1198—1965

Orthogonal polynomial representation of vowels. James R. Young. **37**: 1211—1965

Performance evaluation of the vocal-response synthesizer. William D. Voiers and Caldwell P. Smith. **37**: 1199—1965

Preference scaling of vocoder speech. J. Mickunas, Jr. **37**: 1199—1965

Research towards a high-efficiency voice-communication system. Harry F. Olson, H. Belar, and Edward S. Rogers. **37**: 1199—1965

Review of formant vocoder technology. S. J. Campanella and D. C. Coulter. **37**: 1217—1965

Speech-compression simulation compiler. Charles M. Rader. **37**: 1199—1965

Synthesis of components of voice quality. J. D. M. Laver and Walter Lawrence. **37**: 1186—1965

Technique for the representation of speech power-spectrum envelopes. Jaime R. Carbonell and M. C. Grignetti. **37**: 1211—1965

9.5 **Perception of Speech and Speechlike Sounds. (See also 4.15.)**

Papers

Pure-tone acuity and the intelligibility of everyday speech. J. D. Harris. **37**: 824—1965

Abstracts

Comparison of information in certain multidimensional acoustics signals. Robert B. Chaney, Jr., and J. C. Webster. **37**: 1205—1965

Decision procedures for discriminating between speakers. Richard W. Becker. **37**: 1212—1965

Effects of frequency filtering upon the information content and structure of voice ratings. William D. Voiers and J. F. Miller. **37**: 1212—1965

Equivalent forms in intelligibility testing—limitations and an alternative procedure. Frank R. Clarke. **37**: 1205—1965

Experiments in pitch detection. David E. Wood. **37**: 1211—1965

Matching speech cineradiography with pseudospeech. H. M. Truby. **37**: 1187—1965

Method for measurement of speech identification. Charles Speaks and James Jerger. **37**: 1205—1965

Monaural and binaural discrimination against competing sentences. Raymond Carhart. **37**: 1205—1965

Reevaluation of the effects of competing speech on aided discrimination of monosyllables. Wayne O. Olsen and Tom W. Tillman. **37**: 1205—1965

Repetition and recognition of nonsense. Jarvis Bastian and Louise D. Tanous. **37**: 1217—1965

Speaker identification by a matching-from-sample technique. Jaime R. Carbonell, Kenneth N. Stevens, Carl E. Williams, and B. Woods. **37**: 1205—1965

Speaker recognition by humans. Frank R. Clarke. **37**: 1211—1965

Survey of auditory discrimination abilities of unpracticed subjects. W. D. Riach and Constantine Trahiotis. **37**: 1206—1965

Word discrimination in cat. Robert J. Ruben, Dickens Warfield, and Robert Glackin. **37**: 1204—1965

9.6 **Measures of Speech Intelligibility, Quality, Information Content**

Papers

Articulation-testing methods: consonantal differentiation with a closed-response set. Arthur S. House, Carl E. Williams, Michael H. L. Hecker, and K. D. Kryter. **37**: 158—1965

Pure-tone acuity and the intelligibility of everyday speech. J. D. Harris. **37**: 824—1965

Speech communications as limited by ambient noise. J. C. Webster. **37**: 692—1965

Letters to the Editor

Some comparisons between rhyme and PB-word intelligibility tests. K. D. Kryter and E. C. Whitman. **37**: 1146—1965

Abstracts

Communication-system evaluation from the standpoint of speaker recognizability. William D. Voiers. **37**: 1199—1965

Diagnostic rhyme test for the evaluation of communications systems. Marion F. Cohen, J. Mickunas, Jr., J. F. Miller, and William D. Voiers. **37**: 1206—1965

Effects of frequency filtering upon the information content and structure of voice ratings. William D. Voiers and J. F. Miller. **37**: 1212—1965

Effects of stimulus presentation rate upon intelligibility-test scores. Marion F. Cohen. **37**: 1206—1965

Equivalent forms in intelligibility testing—limitations and an alternative procedure. Frank R. Clarke. **37**: 1205—1965

Method for measurement of speech identification. Charles Speaks and James Jerger. **37**: 1205—1965

Performance evaluation of the vocal-response synthesizer. William D. Voiers and Caldwell P. Smith. **37**: 1199—1965

Power-level criteria for noise control. Carlyle M. Ashley. **37**: 1188—1965

Speaker identification by a matching-from-sample technique. Jaime R. Carbonell, Kenneth N. Stevens, Carl E. Williams, and B. Woods. **37**: 1205—1965

Survey of auditory discrimination abilities of unpracticed subjects. W. D. Riach and Constantine Trahiotis. **37**: 1206—1965

9.7 **Phonetics, Linguistics, Statistics of Language**

Abstracts

Analysis and presentation of confusion-matrix data. David R. Hill. **37**: 1211—1965

Dialects, phonetic transcriptions or phonemes of English? B. V. Bhimani. **37**: 1210—1965

Operationally defined homonyms of one syllable in the English language. B. V. Bhimani, L. Earl, and R. Mitchell. **37**: 1210—1965
Orthogonal polynomial representation of vowels. James R. Young. **37**: 1211—1965
Parametric phonetics. Walter Lawrence. **37**: 1186—1965
Variations in spoken-digit duration in a restricted environment. Kung-Pu Li and W. D. Chapman. **37**: 1211—1965

9.8 **Systems for Speech Transmission. Analysis-Synthesis Telephony, Speech Coding**

Letters to the Editor
Comparison of vector and autocorrelation pitch detectors. Leo I. Bluestein and Charles M. Rader. **37**: 751—1965

Abstracts
Voiceprint classification. L. G. Kersta. **37**: 1217—1965

Patents
Pitch synchronous autocorrelation vocoder. Edward E. David, Jr., and John R. Pierce. **37**: 575—1965
Speech signal transmission system. Petrus Josephus van Gerwen. **37**: 575—1965
Voice activated intercommunication system. Michael F. De Vito. **37**: 208—1965

9.10 **Machine Recognition of Speech**

Abstracts
Analysis and presentation of confusion-matrix data. David R. Hill. **37**: 1211—1965

10 ULTRASONICS

10.1 **General, Unclassified**

Abstracts
Acoustical spectroscopy using optical masers. Boris Stoicheff. **37**: 1204—1965
50 years of physical ultrasonics. Karl F. Herzfeld. **37**: 1203—1965

Book Reviews
Ultrasonic Cutting. L. D. Rozenberg, V. F. Kazantsev, L. O. Makarov, and D. F. Yakimovich. (Reviewed by Martin Greenspan.) **37**: 1161—1965

News
IEEE Group on Sonics and Ultrasonics meets. **37**: 762—1965
International Symposium on Ultrasonic Diagnostics in Ophthalmology. Peter Eisenberg. **37**: 542—1965
II International Symposium on Ultrasonic Testing of Materials. **37**: 939—1965

10.2 **Physical Effects of Ultrasonic Waves. Optical Diffraction. Ultrasonic Processing**

Papers
Focusing ultrasonic system applicable to two-dimensional optical beam scanning and laser output modulation. David E. Flinchbaugh. **37**: 975—1965

Letters to the Editor
Optical method for ultrasonic waveform analysis, using a recursion relation. Bill D. Cook. **37**: 172—1965

Abstracts
Acoustic beam probing, using optical techniques. M. G. Cohen and E. I. Gordon. **37**: 1204—1965
Acoustic beam probing, using optical techniques in lossy media. E. I. Gordon and M. G. Cohen. **37**: 1204—1965
Bragg reflection by ultrasonic waves—Fresnel region. W. R. Klein. **37**: 1204—1965
Numerical results from a successive diffraction theory for diffraction of light by ultrasonic waves. L. E. Hargrove. **37**: 1182—1965
Propagation of hypersound in benzene. J. E. Piercy, G. R. Hanes, and R. Turner. **37**: 1204—1965

Patents
Method of ultrasonic removal of material by fatigue failure. Lewis Balamuth. **37**: 775—1965
Ultrasonic power meter. Frederick S. Wreford. **37**: 407—1965

10.3 **Ultrasonic Instruments. (See also 5.18.)**

Papers
Focusing ultrasonic system applicable to two-dimensional optical beam scanning and laser output modulation. David E. Flinchbaugh. **37**: 975—1965
Variations of the ultrasonic pulse-superposition method for increasing the sensitivity of delay-time measurements. H. J. McSkimin. **37**. 864—1965
Velocity of sound in distilled water for the temperature range 20°–75°C. H. J. McSkimin. **37**: 325—1965

Letters to the Editor
Apparatus for simultaneous low-temperature shear-deformation and ultrasonic-attenuation measurements in superconductors. Tore Olsen, Lewis T. Claiborne, and Norman G. Einspruch. **37**: 755—1965
Method for evaluating transducer-loading effects on ultrasonic transit-time measurements. E. W. Kammer. **37**: 929—1965
Optical-contact bonding. H. I. Smith. **37**: 928—1965
Reflection of gigacycle-per-second ultrasonic waves from an optical-contact bond. Paul H. Carr. **37**: 927—1965

Abstracts
High-temperature acoustics techniques and applications. E. H. Carnevale. **37**: 1204—1965
Periodic interferometer for measuring relative phase velocity of sound in fluids. Donald S. Moseley. **37**: 1209—1965

Patents
Apparatus for ultrasonically testing welds. Hans Bincer and John R. Boxcer. **37**: 775—1965
Devices for non-destructive ultrasonic testing of material. Horst Rudolf Loos. **37**: 964—1965
Differential acoustic transducer. Elliott A. Henry. **37**: 964—1965
Flaw detection apparatus. Leon D. Furon. **37**: 1169—1965
Magnetostrictive sensing devices. Sidney R. Tomes. **37**: 407—1965
Method and device for controlling ultrasonic welding apparatus. Daniel C. Worlton and Ray A. Walker. **37**: 965—1965
Scanning system for ultrasonic inspection apparatus. Henry S. Bamford. **37**: 964—1965
Sonar telescriber. George M. Stamps. **37**: 1170—1965

Ultra-sonic apparatus for the detection of defects in railway rails. Roger Legrand. 37: 775—1965
Ultrasonic flaw detecting apparatus. Donald Orr Sproule. 37: 776 (2 Patents)—1965
Ultrasonic flowmeter. Walter Welkowitz. 37: 1170—1965
Ultrasonic image detector. Henrique A. F. Rocha. 37: 776—1965
Ultrasonic inspection and measuring means. Elliott A. Henry. 37: 1169—1965
Ultrasonic inspection system. Ivan L. Joy. 37: 777—1965
Ultrasonic measurement apparatus. Donald C. Erdman. 37: 1169—1965
Ultrasonic measurement apparatus. Leon D. Furon. 37: 1169—1965
Ultrasonic nondestructive testing apparatus and control therefor. Donald C. Erdman. 37: 964—1965
Ultrasonic search tube support having multiplicity of follower movements. Walter J. Gibson, Albert M. De Stephen, and Ernst W. Allardt. 37: 777—1965
Ultrasonic test apparatus. Charles W. Cline and Selmer G. van Stocker. 37: 775—1965
Ultrasonic test apparatus. Robert Sydney Martin Moffatt and Kenneth Storer. 37: 964—1965
Ultrasonic testing apparatus. Ewart Gordon Lewis, Dennis Arthur George Eldridge, Geoffrey Bradfield, and Hastings Charles Maxim Bertoya. 37: 776—1965
Ultrasonic testing arrangement. Edward G. Cook, Julius F. Tibolla, and Constantine Foundos. 37: 1169—1965
Ultrasonic testing device. Robert B. Heller. 37: 776—1965
Ultrasonic thickness gage. Robert V. Harris. 37: 965—1965
Ultrasonic tool. Jerome H. Lemelson. 37: 1170—1965
Uitrasonic transmitter. Howard Grossenheider. 37: 1169—1965
Universal ultrasonic sending and receiving apparatus. Selmer G. van Stocker. 37: 775—1965
Vibratory welding process and apparatus. James Byron Jones. 37: 777—1965
Weld inspection apparatus with two spaced transducers. Walter J. Gibson and Wilson F. Gibbons. 37: 777—1965

10.4 Gases, Ultrasonic Velocity, Dispersion, Absorption. (See also 11.3.)

Papers

Effect of water vapor on the Napier frequency of oxygen and air. Malcolm C. Henderson and Karl F. Herzfeld. 37: 986—1965
Propagation of forced sound waves in rarefied gasdynamics. Lawrence Sirovich and James K. Thurber. 37: 329—1965
Thermal relaxation in oxygen with CH_4 and CD_4 admixtures. Urban E. Schnaus. 37: 1—1965
Thermal relaxation in oxygen with H_2O, HDO, and D_2O vapors as impurities. Malcolm C. Henderson, Anna Vincent Clark, and Paul R. Lintz. 37: 457—1965
Vibrational relaxation times of oxygen in the temperature range 100°–200°C. J. G. Parker and R. H. Swope. 37: 718—1965

Letters to the Editor

Sound absorption in oxygen/water-vapor mixtures. James B. Calvert. 37: 386—1965
Ultrasonic absorption and dispersion in monatomic gases. II. R. H. Enns. 37: 754—1965
Vibrational and rotational relaxation in water vapor. H. Roesler and K.-F. Sahm. 37: 386—1965

Abstracts

Thermal-relaxation absorption in carbon dioxide/water-vapor mixtures. James W. L. Lewis, K. P. Lee, and F. Douglas Shields. 37: 1214—1965

News

Symposium on Gaseous Propagation. 37: 187—1965

10.5 Liquids, Ultrasonic Velocity, Dispersions, Absorption. (See also 13.2 and 13.3.)

Papers

Propagation of finite-amplitude ultrasound in a relaxing liquid. R. P. Ryan, C. R. Attanasio, and Robert T. Beyer. 37: 602—1965
Ultrasonic relaxation and *cis-trans* isomerization in methyl and ethyl formates. S. V. Subrahmanyam and J. E. Piercy. 37: 340—1965
Velocity of sound in distilled water for the temperature range 20°–75°C. H. J. McSkimin. 37: 325—1965

Abstracts

Acoustical spectroscopy using optical masers. Boris Stoicheff. 37: 1204—1965
Acoustic beam probing, using optical techniques. M. G. Cohen and E. I. Gordon. 37: 1204—1965
Acoustic beam probing, using optical techniques in lossy media. E. I. Gordon and M. G. Cohen. 37: 1204—1965
Comparison of vibration potentials of bovine serum albumin with that of a paraffin chain salt. Richard B. Beard. 37: 1196—1965
Effect of dipolar forces between molecules on ultrasonic relaxation caused by rotational isomerism. J. E. Piercy and M. G. Seshagiri Rao. 37: 1214—1965
Effect of localized sound on an electrode reaction. W. E. Rowe and Wesley L. Nyborg. 37: 1214—1965
Periodic interferometer for measuring relative phase velocity of sound in fluids. Donald S. Moseley. 37: 1209—1965
Propagation of hypersound in benzene. J. E. Piercy, G. R. Hanes, and R. Turner. 37: 1204—1965
Sound absorption in electrolytes. LeRoy Jackopin, John Stuehr, and Ernest Yeager. 37: 1214—1965
Three experiments on diffraction from periodic surfaces. Emmanuel P. Papadakis. 37: 1176—1965
Ultrahigh-frequency pulse measurements in relaxing liquids. Joseph L. Hunter and Henry D. Dardy. 37: 1214—1965
Ultrasonic absorption by protein solutions. Peter D. Edmonds. 37: 1195—1965
Ultrasonic absorption in aqueous solutions of high molecular-weight polysaccharides. S. A. Hawley, L. W. Kessler, and Floyd Dunn. 37: 1195—1965
Ultrasonic absorption in solutions of amino acids. Robert E. Barrett. 37: 1196—1965
Viscoelastic properties of polystyrene solutions. J. Lamb. 37: 1215—1965

10.6 **Solids, Ultrasonic Velocity, Dispersion, Absorption**

Papers

Effective elastic coefficients for wave propagation in crystals under stress. R. N. Thurston. **37**: 348—1965

Revised grain-scattering formulas and tables. Emmanuel P. Papadakis. **37**: 703—1965

Sound propagation in near-stoichiometric Ti-Ni alloys. David Bradley. **37**: 700—1965

Ultrasonic attenuation caused by scattering in polycrystalline metals. Emmanuel P. Papadakis. **37**: 711—1965

Letters to the Editor

Optical-contact bonding. H. I. Smith. **37**: 928—1965

Reflection of gigacycle-per-second ultrasonic waves from an optical-contact bond. Paul H. Carr. **37**: 927—1965

Some elastic constants of silicon carbide. G. Arlt and G. R. Schodder. **37**: 384—1965

Abstracts

Acoustical spectroscopy using optical masers. Boris Stoicheff. **37**: 1204—1965

Interference of finite-amplitude ultrasonic waves in solids. W. B. Gauster and M. A. Breazeale. **37**: 1182—1965

Velocity of sound in single-crystal ice. T. M. Proctor, Jr. **37**: 1214—1965

News

Conference on Acoustics of Solid Media. **37**: 186—1965

Errata

Effective elastic coefficients for wave propagation in crystals under stress [J. Acoust. Soc. Am. **37**: 348–356 (1965)]. R. N. Thurston. **37**: 1147—1965

10.9 **Biological Effects of Ultrasonic Waves**

Abstracts

Changes in behavior of mosses treated with ultrasound. Hubert J. Dyer. **37**: 1195—1965

Disruption of microorganisms by ultrasound—a cooling device for use with the sonifier. Theodore Rosett. **37**: 1196—1965

Effect of ultrasound on permeability of cell membrane. Dale C. Braungart. **37**: 1195—1965

Effects of ultrasound on the ultrastructure of liver cells of the mouse. Joseph C. Curtis. **37**: 1196—1965

Injury induced in isolated muscle fiber by locally applied ultrasound. Walter L. Wilson, Floyd J. Wiercinski, and Ronald M. Schnitzler. **37**: 1217—1965

Physical mechanisms for biological effects of sound. Wesley L. Nyborg, C. Chuongvan, and H. P. Claes. **37**: 1195—1965

Some biological effects of ultrasound. David E. Hughes. **37**: 1195—1965

Ultrasonic absorption in biological media. Floyd Dunn. **37**: 1195—1965

10.10 **Ultrasonic Relaxation Processes in Solids, Liquids, and Gases**

Papers

Effect of water vapor on the Napier frequency of oxygen and air. Malcolm C. Henderson and Karl F. Herzfeld. **37**: 986—1965

Propagation of finite-amplitude ultrasound in a relaxing liquid. R. P. Ryan, C. R. Attanasio, and Robert T. Beyer. **37**: 602—1965

Thermal relaxation in oxygen with CH_4 and CD_4 admixtures. Urban E. Schnaus. **37**: 1—1965

Thermal relaxation in oxygen with H_2O, HDO, and D_2O vapors as impurities. Malcolm C. Henderson, Anna Vincent Clark, and Paul R. Lintz. **37**: 457—1965

Ultrasonic relaxation and *cis-trans* isomerization in methyl and ethyl formates. S. B. Subrahmanyam and J. E. Piercy. **37**: 340—1965

Vibrational relaxation times of oxygen in the temperature range 100°–200°C. J. G. Parker and R. H. Swope. **37**: 718—1965

Letters to the Editor

Sound absorption in oxygen/water-vapor mixtures. James B. Calvert. **37**: 386—1965

Vibrational and rotational relaxation in water vapor. H. Roesler and K.-F. Sahm. **37**: 386—1965

Abstracts

Effect of dipolar forces between molecules on ultrasonic relaxation caused by rotational isomerism. J. E. Piercy and M. G. Seshagiri Rao. **37**: 1214—1965

Sound absorption in electrolytes. LeRoy Jackopin, John Stuehr, and Ernest Yeager. **37**: 1214—1965

Thermal-relaxation absorption in carbon dioxide/water-vapor mixtures. James W. L. Lewis, K. P. Lee, and F. Douglas Shields. **37**: 1214—1965

Ultrahigh-frequency pulse measurements in relaxing liquids. Joseph L. Hunter and Henry D. Dardy. **37**: 1214—1965

Viscoelastic properties of polystyrene solutions. J. Lamb. **37**: 1215—1965

Subtitles

Ultrasonic relaxation processes. F. Douglas Shields, K. P. Lee, and W. J. Wiley. **37**: 728—1965

News

Symposium on Molecular Relaxation Processes. **37**: 939—1965

11 **RADIATION AND SCATTERING**

11.1 **General, Unclassified**

Papers

Sound propagation in urban areas. Francis M. Wiener, Charles I. Malme, and Creighton M. Gogos. **37**: 738—1965

Abstracts

Sound transmission through a finite, closed, cylindrical shell. Pritchard H. White. **37**: 1176—1965

11.1.5 **Analogies**

Papers

Radiation impedance of a piston on cohesive soil. Arthur F. Niemoeller. **37**: 879—1965

Abstracts

Acoustical modeling in architectural acoustics. Paul S. Veneklasen, Jose C. Ortega, Jerry P. Christoff, John Little and Bonard Morse. **37**: 1188—1965

Effect of Thevenin equivalent internal impedance on velocity control and acoustic power of planar broadside arrays. David T. Porter. 37: 1183—1965
Ocean as a filter. Antares Parvulescu. 37: 1218—1965

Subtitles
Analogies. G. Arlt. 37: 154—1965
Analogies. A. H. Benade and J. W. French. 37: 680—1965
Analogies. Robert J. Bobber. 37: 593—1965
Analogies. Paul M. Kendig. 37: 848—1965
Analogies. W. J. Toulis. 37: 252—1965

11.2 **Reflection, Refraction, Diffraction, and Interference of Sound Waves**

Papers
Approximation to the diffraction of sound by a circular aperture in a rigid wall of finite thickness. George P. Wilson and Walter W. Soroka. 37: 286—1965
Control of the acoustic scattering characteristics of a rigid sphere by surface loading. T. B. A. Senior. 37: 464—1965
Deformation of an exponential pulse with a finite rise time in the region of total reflection. L. R. B. Duykers. 37: 1052—1965
Exact inverse-separation series for multiple scattering in two dimensions. James E. Burke, Dan Censor, and Victor Twersky. 37: 5—1965
Interference pattern observed in reflections from the ocean bottom. M. Vertner Brown and James H. Ricard. 37: 1033—1965
Interference patterns in reverberant sound fields. II. Richard V. Waterhouse and Richard K. Cook. 37: 424—1965
Low-frequency expansions for scattering by separable and nonseparable bodies. D. A. Darling and T. B. A. Senior. 37: 228—1965
Measurement of the transmission loss of a finite-depth aperture. George P. Wilson. 37: 298—1965
Phase distortion of a pulse caused by bottom reflection. Benjamin F. Cron and Albert H. Nuttall. 37: 486—1965
Reflection and refraction of sound by a nonequilibrium relaxing medium. Kuo Chang Wang. 37: 989—1965
Reflection of low-frequency sonar signals from a smooth ocean bottom. H. P. Bucker, J. A. Whitney, G. S. Yee, and R. R. Gardner. 37: 1037—1965
Revised grain-scattering formulas and tables. Emmanuel P. Papadakis. 37: 703—1965
Scattering of acoustic waves by pressure fluctuations. Franklin Pollock. 37: 596—1965
Scattering theory for one-dimensional problems. Mark Harrison and Robert Plutchok. 37: 84—1965
Sound propagation in urban areas. Francis M. Wiener, Charles I. Malme, and Creighton M. Gogos. 37: 738—1965
Thermal stress-wave propagation in hollow elastic spheres. T. Tsui and H. Kraus. 37: 730—1965
Wave solution for air-to-water sound transmission. Marvin S. Weinstein and Alan G. Henney. 37: 899—1965

Letters to the Editor
Optical-contact bonding. H. I. Smith. 37: 928—1965
Reflection of gigacycle-per-second ultrasonic waves from an optical-contact bond. Paul H. Carr. 37: 927—1965
Refraction of sound from a point source placed in an air jet. J. Atvars, L. K. Schubert, and H. S. Ribner. 37: 168—1965
Temporal coherence of surface-scattered signals. R. R. Hartley. 37: 1147—1965

Abstracts
Interference of finite-amplitude ultrasonic waves in solids. W. B. Gauster and M. A. Breazeale. 37: 1182—1965
Numerical calculation of the acoustic field owing to a point source on a rigid sphere. G. Samuel Lightner, IV. 37: 1212—1965
Propagation of acoustic waves in plasmas. Uno Ingard. 37: 1208(T)—1965
Propagation of ionic magnetohydrodynamic waves. G. M. Sessler. 37: 1208—1965
Propagation of stress waves in linear viscoelastic solids. H. Kolsky. 37: 1206—1965
Scattering by *n*-element arrays of identical rigid spheres. Mary L. Harbold and Bruce Steinberg. 37: 1184—1965
Some theoretical results on diffraction of short waves by thin obstacles. E. O. Tuck. 37: 1177—1965
Study of acoustic scattering by hollow metallic spheres. K. J. Diercks and Robert Hickling. 37: 1176—1965
Three experiments on diffraction from periodic surfaces. Emmanuel P. Papadakis. 37: 1176—1965
Two-dimensional acoustic fields and amplitude-phase space. J. W. Simmons and Mary L. Harbold. 37: 1212—1965

11.3 **Velocity and Attenuation of Sound Waves. (See also 10.4, 10.5, 10.6, 13.2, and 13.3.)**

Papers
Acoustic-ray equations for a moving, inhomogeneous medium. Peter Uginčius. 37: 476—1965
Analysis of surface-reflected/bottom-reflected ray transmissions in constant-velocity-gradient media. M. J. Jacobson. 37: 885—1965
Attenuation of plane waves in semiinfinite composite bar. Robert Plunkett and Chien-Heng Wu. 37: 28—1965
Axial vibrations of a semiinfinite viscoelastic rod with external elastic constraint. W. Flügge and J. R. Hutchinson. 37: 14—1965
Numerical solution for sound velocity and absorption in cylindrical tubes. F. Douglas Shields, K. P. Lee, and W. J. Wiley. 37: 724—1965
Propagation of acoustic-gravity waves in a temperature- and wind-stratified atmosphere. Allan D. Pierce. 37: 218—1965
Propagation of forced sound waves in rarefied gasdynamics. Lawrence Sirovich and James K. Thurber. 37: 329—1965
Reflection and refraction of sound by a nonequilibrium relaxing medium. Kuo Chang Wang. 37: 989—1965
Thermal stress-wave propagation in hollow elastic spheres. T. Tsui and H. Kraus. 37: 730—1965

Abstracts
Propagation of ionic magnetohydrodynamic waves. G. M. Sessler. 37: 1208—1965
Propagation of stress waves in linear viscoelastic solids. H. Kolsky. 37: 1206—1965

11.4 **Waves in Bounded Media**

Papers

Attenuation of plane waves in semiinfinite composite bar. Robert Plunkett and Chien-Heng Wu. **37**: 28—1965

Axial vibrations of a semiinfinite viscoelastic rod with external elastic constraint. W. Flügge and J. R. Hutchinson. **37**: 14—1965

Extension of the method of normal modes to sound propagation in an almost-stratified medium. Allan D. Pierce. **37**: 19—1965

Frequency equations for the normal modes of vibration for a plate bounded by parabolic cylinders when rotary inertia and transverse shear are considered. Basil V. Nakonechny and W. R. Callahan. **37**: 579—1965

Occurrence of wave effects in rubber antivibration mountings. J. C. Snowdon. **37**: 1027—1965

Reflection and refraction of sound by a nonequilibrium relaxing medium. Kuo Chang Wang. **37**: 989—1965

Reflection of low-frequency sonar signals from a smooth ocean bottom. H. P. Bucker, J. A. Whitney, G. S. Yee, and R. R. Gardner. **37**: 1037—1965

Stability criteria for longitudinal pressure oscillations in a rocket motor. S. N. B. Murthy and J. R. Osborn. **37**: 872—1965

Thermal stress-wave propagation in hollow elastic spheres. T. Tsui and H. Kraus. **37**: 730—1965

Wave propagation in transversely isotropic circular cylinders. Part I: Theory. I. Mirsky. **37**: 1016—1965

Wave propagation in transversely isotropic circular cylinders. Part II: Results. I. Mirsky. **37**: 1022—1965

Letters to the Editor

Use of directional probes for nearfield measurements. Alan H. Lubell. **37**: 1150—1965

Abstracts

Free vibrations of thin isotropic oblate spheroidal shells. Leslie E. Penzes and George Burgin. **37**: 1176—1965

Investigation of wave propagation in hollow tubes. J. H. Heimann and H. Kolsky. **37**: 1175—1965

Sound transmission by thin cylindrical shells. Verner J. Raelson. **37**: 1175—1965

Sound transmission through a finite, closed, cylindrical shell. Pritchard H. White. **37**: 1176—1965

Patents

Ultrasonic flaw detection method and means. Daniel C. Worlton. **37**: 965—1965

11.5 **Radiation from Vibrating Objects in Air and Other Gases. Acoustic Impedance. Sources of Sound. (See also 5.3, 12.3z, and 13.7.)**

Papers

Approximation to the diffraction of sound by a circular aperture in a rigid wall of finite thickness. George P. Wilson and Walter W. Soroka. **37**: 286—1965

Control of the acoustic scattering characteristics of a rigid sphere by surface loading. T. B. A. Senior. **37**: 464—1965

Radiation impedance of a piston on cohesive soil. Arthur F. Niemoeller. **37**: 879—1965

Tuning resonant sound radiators to achieve a minimum acoustic *Q*. M. C. Junger and William Thompson, Jr. **37**: 95—1965

Letters to the Editor

Construction of calculable high acoustic resistances. R. E. Bogner. **37**: 750—1965

Device for generating surface waves with adjustable speed. O. H. Wehrmann and J. L. Lundberg. **37**: 1149—1965

Nomograms for computing real, imaginary, and absolute values of vector ratios. Howard S. Bowman. **37**: 751—1965

Radiation-pressure forces in terms of impedance, admittance, and scattering matrices. W. E. Smith. **37**: 932—1965

Tables for the mutual radiation resistance and reactance of aligned rectangular pistons in an infinite rigid baffle. Elizabeth M. Arase and Peter D. Hahn. **37**: 531—1965

Use of directional probes for nearfield measurements. Alan H. Lubell. **37**: 1150—1965

Abstracts

Acoustic-field modification by a vibrating plate. David F. Pernet and G. R. Hruska. **37**: 1213—1965

Fields radiated from an acoustic line source above a fluid–fluid interface. J. P. Cretella, J. E. Spence, and R. J. Buratti. **37**: 1211—1965

Generation of transient acoustic impulses, using a novel underwater spark sound source. R. A. Wagner and H. A. Wright. **37**: 1177—1965

Mathematical formulation of a class of acoustic-radiation problems involving line sources. J. P. Cretella and J. E. Spence. **37**: 1212—1965

Numerical calculation of sound radiation from a vibrating surface of revolution. Marie Grosso and George Chertock. **37**: 1213—1965

Numerical calculation of the acoustic field owing to a point source on a rigid sphere. G. Samuel Lightner, IV. **37**: 1212—1965

Plane piston at finite amplitude: second harmonics. A. O. Williams, Jr., F. Ingenito, and P. J. Westervelt. **37**: 1181—1965

Reciprocity relations for radiation and diffraction in a moving medium. J. N. Newman. **37**: 1213—1965

11.6 **Wave Propagation in Tubes**

Papers

Acoustic losses of a resonator with steady gas flow. Colin Gordon and P. W. Smith, Jr. **37**: 257—1965

Approximation to the diffraction of sound by a circular aperture in a rigid wall of finite thickness. George P. Wilson and Walter W. Soroka. **37**: 286—1965

Measurement of the transmission loss of a finite-depth aperture. George P. Wilson. **37**: 298—1965

Numerical solution for sound velocity and absorption in cylindrical tubes. F. Douglas Shields, K. P. Lee, and W. J. Wiley. **37**: 724—1965

11.7 **Mathematical Theory of Wave Propagation. Ray Acoustics. (See also 11.1.5.)**

Papers

Acoustic-ray equations for a moving, inhomogeneous medium. Peter Ugincius. **37**: 476—1965

Analysis of surface-reflected/bottom-reflected ray transmission in constant-velocity-gradient media. M. J. Jacobson. **37**: 885—1965

Attenuation of plane waves in semiinfinite composite bar. Robert Plunkett and Chien-Heng Wu. **37**: 28—1965
Axial vibrations of a semiinfinite viscoelastic rod with external elastic constraint. W. Flügge and J. R. Hutchinson. **37**: 14—1965
Control of the acoustic scattering characteristics of a rigid sphere by surface loading. T. B. A. Senior. **37**: 464—1965
Deformation of an exponential pulse with a finite rise time in the region of total reflection. L. R. B. Duykers. **37**: 1052—1965
Effective elastic coefficients for wave propagation in crystals under stress. R. N. Thurston. **37**: 348—1965
Exact inverse-separation series for multiple scattering in two dimensions. James E. Burke, Dan Censor, and Victor Twersky. **37**: 5—1965
Extension of the method of normal modes to sound propagation in an almost-stratified medium. Allan D. Pierce. **37**: 19—1965
Low-frequency expansions for scattering by separable and nonseparable bodies. D. A. Darling and T. B. A. Senior. **37**: 228—1965
Propagation at short ranges of elastic waves from an impulsive source in a shallow fluid overlying a layered elastic solid. A. S. Victor, F. R. Spitznogle, and E. G. McLeroy. **37**: 894—1965
Propagation of acoustic-gravity waves in a temperature- and wind-stratified atmosphere. Allan D. Pierce. **37**: 218—1965
Propagation of forced sound waves in rarefied gasdynamics. Lawrence Sirovich and James K. Thurber. **37**: 329—1965
Reflection and refraction of sound by a nonequilibrium relaxing medium. Kuo Chang Wang. **37**: 989—1965
Scattering theory, with applications to one-dimensional problems. Robert Plutchok and Mark Harrison. **37**: 1056—1965
Thermal stress-wave propagation in hollow elastic spheres. T. Tsui and H. Kraus. **37**: 730—1965
Wave solution for air-to-water sound transmission. Marvin S. Weinstein and Alan G. Henney. **37**: 899—1965

Letters to the Editor

Comments on normal-mode theory. H. W. Marsh. **37**: 1152—1965
Temporal coherence of surface-scattered signals. R. R. Hartley. **37**: 1147—1965

Abstracts

Characteristics of sound propagation in an isothermal atmosphere with constant winds. Allan D. Pierce. **37**: 1208—1965
Fields radiated from an acoustic line source above a fluid-fluid interface. J. P. Cretella, J. E. Spence, and R. J. Buratti. **37**: 1212—1965
Linear modeling of long underwater acoustic paths. W. F. Walker. **37**: 1218—1965
Mathematical formulation of a class of acoustic-radiation problems involving line sources. J. P. Cretella and J. E. Spence. **37**: 1212—1965
Propagation of stress waves in linear viscoelastic solids. H. Kolsky. **37**: 1206—1965
Scattering theory, with applications to one-dimensional problems. Robert Plutchok and Mark Harrison. **37**: 1176—1965
Some theoretical results on diffraction of short waves by thin obstacles. E. O. Tuck. **37**: 1177—1965
Surface waves in an inhomogeneous liquid layer. F. R. DiNapoli and F. H. Middleton. **37**: 1217—1965
Three experiments on diffraction from periodic surfaces. Emmanuel P. Papadakis. **37**: 1176—1965

Subtitles

Ray acoustics. Melvin A. Pedersen and David F. Gordon. **37**: 108—1965

Errata

Effective elastic coefficients for wave propagation in crystals under stress [J. Acoust. Soc. Am. **37**: 348–356 (1965)], R. N. Thurston. **37**: 1147—1965

11.8 Physical Effects of Sound. (See also 12.11.)

Abstracts

Effect of localized sound on an electrode reaction. W. E. Rowe and Wesley L. Nyborg. **37**: 1214—1965
Propagation of acoustic waves in plasmas. Uno Ingard. **37**: 1208(T)—1965
Reciprocity relations for radiation and diffraction in a moving medium. J. N. Newman. **37**: 1213—1965

11.9 Sounds in the Atmosphere

Papers

Acoustic-ray equations for a moving, inhomogeneous medium. Peter Ugincius. **37**: 476—1965
Extension of the method of normal modes to sound propagation in an almost-stratified medium. Allan D. Pierce. **37**: 19—1965
Propagation of acoustic-gravity waves in a temperature- and wind-stratified atmosphere. Allan D. Pierce. **37**: 218—1965
Sound propagation in urban areas. Francis M. Wiener, Charles I. Malme, and Creighton M. Gogos. **37**: 738—1965

Letters to the Editor

Selective attenuation of sound over seating and over grassland. W. E. Scholes. **37**: 756—1965

Abstracts

Air waves from the Alaskan earthquake of 28 March 1964. Jessie M. Young, Gary E. Greene, and Vernon H. Goerke. **37**: 1208—1965
Characteristics of sound propagation in an isothermal atmosphere with constant winds. Allan D. Pierce. **37**: 1208—1965
Infrasound from geophysical phenomena. Jessie M. Young and Gary E. Greene. **37**: 1208—1965
Internal-pressure-wave phenomena and troposphere winds. Jessie M. Young and Howard S. Bowman. **37**: 1208—1965
Ionospheric motions caused by Rayleigh waves. Richard K. Cook and Donald M. Baker. **37**: 1208—1965

12 MECHANICAL VIBRATIONS AND SHOCK. (See also 5., 11., and 16.)

12.1 General, Unclassified

Abstracts

Experimental investigation of boundary-layer-induced vibrations. Michael E. McCormick and Mark Harrison. **37**: 1197—1965

Patents
Magnetostrictive bearing assembly. Ross B. Hall. **37**: 965—1965

12.3 **Instruments and Apparatus Relating to Vibration and Shock. (See also 5.3, 5.4, 5.9, 5.21.)**

Papers
Relationship of measured vibration data to specification criteria. R. C. Kroeger and G. J. Hasslacher, III. **37**: 43—1965

Patents
Apparatus for use in a vibration testing system. Charles E. Maki. **37**: 575—1965
Method of an apparatus for vibration testing. Howard H. Arnold. **37**: 575—1965

12.3i **Vibration Isolators, Attenuators, and Dampers. (See also 2.11 and 5.21.)**

Papers
Technique for determining the frequency response of linear mechanical systems. L. S. Pechter, H. Kamei, L. N. Tanner, and L. J. Knudsen. **37**: 66—1965

Abstracts
Vibration isolator for stable platforms. Philip Marshall. **37**: 1215—1965
Dual-phase damping material. G. E. Warnaka, Edward M. Kerwin, Jr., and Jaime R. Carbonell. **37**: 1215—1965
Mobility characteristics of idealized machines having an arbitrary number of mounting points. Jerome S. Parsons. **37**: 1216—1965
Multiple-band configurations for high damping. B. J. Lazan, G. Sokol, and A. F. Metherell. **37**: 1207—1965
Reduction of ships' noise by viscoelastic damping. Robert R. James. **37**: 1207—1965
Use of plastic models for determining the vibration characteristics of large structures. D. V. Wright. **37**: 1207—1965
Vibration mounts for nonrigid structures. Eric E. Ungar and Charles W. Dietrich. **37**: 1207—1965
Vibration of resilient isolators and structures that possess viscoelasticity. J. C. Snowdon. **37**: 1206—1965

Patents
Road noise isolation means for a motor vehicle suspension support. John Stan Wroby. **37**: 777—1965
Shaft vibration dampening. Hugh W. Larsen. **37**: 1170—1965
Shock mount. William J. Coyle. **37**: 1171—1965
Vibration isolator mount. James J. Kerley, Jr., Raymond G. Hartenstein, and Robert F. Cecce. **37**: 1170—1965
Vibration mount for compressors and the like. Robert E. Rogers. **37**: 1170—1965

12.3p **Vibration Pickups and Indicators. Calibration Equipment and Techniques. (See also 5.9, 5.18, and 13.11t.)**

Papers
Relationship of measured vibration data to specification criteria. R. C. Kroeger and G. J. Hasslacher, III. **37**: 43—1965

Patents
Electromagnetic pick-up apparatus for the reception of oscillations. Bořivoj Dubský and Oldřich Straka. **37**: 965—1965
Sonic inspection apparatus. Milton J. Diamond, Phillip O. Frederickson, and Robert F. Spain. **37**: 966—1965
Ultrasonic sensor device. Richard B. Houghton and Frank P. De Luca. **37**: 407—1965
Vibration wave distance measuring device. Frank K. Williams. **37**: 965—1965

12.3v **Vibration Generators. Shake Tables. (See also 5.21.)**

Abstracts
Turbulent wall jet as a broad-band shaker. Richard H. Lyon and Colin Gordon. **37**: 1216—1965
Use of plastic models for determining the vibration characteristics of large structures. D. V. Wright. **37**: 1207—1965

Patents
Two pole transducer. James A. Ross. **37**: 966—1965
Vibration exciter employing a liquid mass. Robert M. Carrier, Jr. **37**: 575—1965
Vibratory device for delivering vibratory energy at high power. James Byron Jones, Carmine F. De Prisco, and Nicholas Maropis. **37**: 777—1965
Vibratory electric motor. Delbert E. Case. **37**: 408—1965

12.3z **Mechanical-Impedance Measurement. (See also 5.3 and 11.4.)**

Papers
Mechanical impedance of free–free beams. J. C. Snowdon. **37**: 240—1965

Patents
Structural bond evaluation. James S. Arnold and Joseph A. Kochly. **37**: 1171—1965
Ultrasonic mechanical impedance measuring device. Elliott A. Henry. **37**: 777—1965

12.5 **Shock. (See also 14.2 and 13.10.)**

Abstracts
Compressibility effects in the problem of body impact on a free surface. T. Francis Ogilvie. **37**: 1190—1965
Hydroelastic effects in ship slamming. W. Kay Meyerhoff. **37**: 1190—1965

12.7 **Theory of Vibrating Systems. (See also 11.7 and 11.1.5.)**

Papers
Behavior of linear systems with random parametric excitation. A. H. Gray, Jr. **37**: 235—1965
Extensional vibrations of thin rectangular plates. M. A. Medick and Yih-Hsing Pao. **37**: 59—1965
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Frequency equations for the normal modes of vibration for a plate bouned by parabolic cylinders when rotary inertia and transverse shear are considered. Basil V. Nakonechny and W. R. Callahan. **37**: 579—1965

Frequency equations for the normal modes of vibration for elliptical ring, including transverse shear and rotary inertia. W. R. Callahan. 37: 480—1965

Green's-function technique in the dynamics of a finite cylindrical shell. M. G. Cottis. 37: 31—1965

Mechanical impedance of free-free beams. J. C. Snowdon. 37: 240—1965

Method of determining complex Poisson's ratio and dilatational constants, using forced vibration of a sphere. T. M. Lee and J. L. Smith. 37: 54—1965

Occurrence of wave effects in rubber antivibration mountings. J. C. Snowdon. 37: 1027—1965

Technique for determining the frequency response of linear mechanical systems. L. S. Pechter, H. Kamei, L. N. Tanner, and L. J. Knudsen. 37: 66—1965

Thermal circuit approach to vibrations in coupled systems, and the noise reduction of a rectangular box. Ewald Eichler. 37: 995—1965

Wave propagation in transversely isotropic circular cylinders. Part I: Theory. I. Mirsky. 37: 1016—1965

Wave propagation in transversely isotropic circular cylinders. Part II: Theory. I. Mirsky. 37: 1022—1965

Letters to the Editor

Comments on: "Free vibration of rotationally symmetric shells." J. L. Bogdanoff and J. E. Goldberg. 37: 931—1965

Discussion of: "Effect of bending on vibrations of spherical shells." Ivor K. McIvor and David A. Sonstegard. 37: 931—1965

Reply to the Comments on "Free vibration of rotationally symmetric shells." A. Kalnins. 37: 931—1965

Reply to the Discussion of: "Effect of bending on vibrations of spherical shells." A. Kalnins. 37: 932—1965

Abstracts

Free vibrations of thin isotropic oblate spheroidal shells. Leslie E. Penzes and George Burgin. 37: 1176—1965

Longitudinal vibrations of a drill string. F. A. Angona. 37: 1216—1965

Measurement of natural frequencies and fluid loading of propellers, using mechanical-impedance techniques. Fred Schloss. 37: 1215—1965

Problem in dynamic thermoelasticity. Y. T. Tsui. 37: 1213—1965

Series representation of structural mobility. V. H. Neubert. 37: 1216—1965

Sloshing of a liquid in connected cylindrical tanks owing to U-tube free oscillations. Gordon C. K. Yeh. 37: 1215—1965

Theory of damped flexural vibrations. Ray D. Hoffman. 37: 1215—1965

Transient vibration of thin elastic shells. H. Kraus and A. Kalnins. 37: 1176—1965

Errata

Flow excitation of cylindrical shells and associated coincidence effects [J. Acoust. Soc. Am. **36**, 878–884 (1964)]. J. V. Rattayya and M. C. Junger. 37: 387—1965

12.10 Seismology. Geophysical Prospecting. Seismographs

Abstracts

Ionospheric motions caused by Rayleigh waves. Richard K. Cook and Donald M. Baker. 37: 1208—1965

Patents

Acoustic bore hold logging systems and apparatus. Gerald C. Summers. 37: 211—1965

Acoustic logging apparatus. Robert B. Blizard. 37: 213—1965

Acoustic velocity logging system. Frank P. Kokesh. 37: 212—1965

Acoustic well logging apparatus. Robert B. Blizard. 37: 211—1965

Automatic correction of seismic records. Warren A. Alexander and Robert L. Wilcox. 37: 212—1965

Compositing sequentially produced signals. William E. N. Doty. 37: 209—1965

Correlation by random time reference utilization. Alvin H. Clement. 37: 214—1965

Elimination of instrumentation distortion. Philip L. Lawrence and Manus R. Foster. 37: 211—1965

First break controlled inverse seismic filtering. Philip L. Lawrence. 37: 210—1965

Geophysical exploration. Jesse D. Skelton, Philip S. Williams, and John T. Baker. 37: 210—1965

Means for determining the fluid level in a well. Roy J. Clements. 37: 213—1965

Method and apparatus for creating a seismic source. Albert L. Wade. 37: 214—1965

Method and apparatus for minimizing cavity effects in acoustic logging. Harold S. Platt. 37: 211—1965

Method for analyzing geophysical records. Warren A. Alexander and Benjamin F. McCoy. 37: 214—1965

Recording of well logging data. Charles I. Alexander. 37: 211—1965

Seismic data presentation method and system. George B. Amery. 37: 212—1965

Seismic exploration. Alexander R. Aitken, John A. F. Gerrard, George P. Sarrafian, and Hal J. Jones. 37: 210—1965

Seismic exploration. Warren A. Alexander and Joseph F. Bayhi. 37: 212—1965

Seismic exploration method. Edwin B. Neitzel. 37: 211—1965

Seismic profiling system. Richard N. Jolly. 37: 213—1965

Seismic recording. Karl O. Heintz and Robert S. Stanley. 37: 212—1965

Seismic recording method. Kay N. Burns. 37: 210—1965

Seismic record synthesis. Ralph A. Landrum, Jr., Samuel T. Martner, and Joseph D. Eisler. 37: 214—1965

Seismic well logging data display. Robert L. Geyer and Neil R. Sparks. 37: 212—1965

Selective mixing of seismic signals. Armistead M. Moore. 37: 210—1965

Simultaneous plural spacing acoustical logging. Kerry D. Savage, Roy P. Mazzagatti, and Gerhard Herzog. 37: 213—1965

Single strength member for multitransducer mounting in acoustic well logging tools. Allen W. Engle. 37: 213—1965

Sonic earth boring drill with jacket. Albert G. Bodine. 37: 213—1965

Sonic pump. Albert G. Bodine, Jr. 37: 213—1965

System for seismic prospecting using the weight dropping technique. Tobias Flatow. 37: 210—1965
Well logging systems. William P. Schneider. 37: 212—1965

12.11 **Effect of Sound on Structures. Fatigue. (See also 11.8.)**

Abstracts
Estimating the acoustic loading on building structures near launch sites. Kenneth McK. Eldred and Louis C. Sutherland. 37: 1189—1965
Experimental investigation of boundary-layer-induced vibrations. Michael E. McCormick and Mark Harrison. 37: 1197—1965
Laboratory simulation of the response of structures exposed to intense acoustic environments. Daniel J. Bozich. 37: 1197—1965
Measurement of noise damage to community building near launch sites. Richard W. Peverley. 37: 1189—1965
Some research features and capabilities of the Langley low-frequency noise facility. Philip M. Edge, Jr., and William H. Mayes. 37: 1189—1965
Use of plastic models for determining the vibration characteristics of large structures. D. V. Wright. 37: 1207—1965

13 **UNDERWATER SOUND**

13.1 **General, Unclassified**

Papers
Comparison of theoretical and experimental values of spatial correlation. Benjamin F. Cron, Beverly C. Hassell, and Frank J. Keltonic. 37: 523—1965

News
ASME Underwater Technology Conference. 37: 1157—1965
Ships named for acousticians. 37: 1156—1965
Underwater Detection Laboratory of Le Brusc. 37: 939—1965

13.2 **Propagation of Sound in Water. Attenuation. Fluctuation**

Papers
Analysis of surface-reflected/bottom-reflected ray transmission in constant-velocity-gradient media. M. J. Jacobson. 37: 885—1965
Extension of the method of normal modes to sound propagation in an almost-stratified medium. Allan D. Pierce. 37: 19—1965
Mathematical models for the prediction of SOFAR propagation effects. Peter Hirsch and Ashley H. Carter. 37: 90—1965
Normal-mode theory applied to short-range propagation in an underwater acoustic surface duct. Melvin A. Pedersen and David F. Gordon. 37: 105—1965
Phase distortion of a pulse caused by bottom reflection. Benjamin F. Cron and Albert H. Nuttall. 37: 486—1965
Propagation at short ranges of elastic waves from an impulsive source in a shallow fluid overlying a layered elastic solid. A. S. Victor, F. R. Spitznogle, and E. G. McLeroy. 37: 894—1965
Wave solution for air-to-water sound transmission. Marvin S. Weinstein and Alan G. Henney. 37: 899—1965

Letters to the Editor
Comments on normal-mode theory. H. W. Marsh. 37: 1152—1965
General spreading-loss expression. Edward S. Eby and Lloyd T. Einstein. 37: 933—1965
Temporal coherence of surface-scattered signals. R. R. Hartley. 37: 1147—1965
Total internal reflection of pulses in stratified media. I. Tolstoy. 37: 1153—1965

Abstracts
Acoustic signal fluctuations in a simulated random medium. G. C. Knollman and J. J. Hartog. 37: 1184—1965
Analysis of underwater acoustic backscattering from a random surface. Lester R. LeBlanc and R. F. Hill. 37: 1191—1965
Attenuation-loss measurements in the SOFAR channel. B. Sussman, R. B. MacDonald, and W. G. Kanabis. 37: 1191—1965
Bearing stability in an ocean medium. R. J. Nielsen and M. C. Karamargin. 37: 1190—1965
Caustics and convergence zones in deep-water sound transmission. R. J. Urick. 37: 1191—1965
Damping constants and the definition of models for cavitation bubbles. H. G. Flynn. 37: 1182—1965
Deep-scattering-layer observations off Southern and Baja California. E. G. Barham and W. E. Batzler. 37: 1192—1965
Detailed study of sound reflection from a layered ocean bottom. Paul Stangerup. 37: 1191—1965
Linear modeling of long underwater acoustic paths. W. F. Walker. 37: 1218—1965
Ocean as a filter. Antares Parvulescu. 37: 1218—1965
Reproducibility of reflections from the bottom of the ocean. C. S. Clay and W. L. Liang. 37: 1191—1965
Stability of propagated sound. I. Antares Parvulescu and C. S. Clay. 37: 1218—1965
Stability of propagated sound. II. Antares Parvulescu and Dana D. Mitchell. 37: 1218—1965
Statistics of sound multipaths. J. J. Martin. 37: 1191—1965
Surface waves in an inhomogeneous liquid layer. F. R. DiNapoli and F. H. Middleton. 37: 1217—1965

13.3 **Velocity of Sound in Water. Refraction. Doppler Effect**

Papers
Interference pattern observed in reflections from the ocean bottom. M. Vertner Brown and James H. Ricard. 37: 1033—1965
Mathematical models for the prediction of SOFAR propagation effects. Peter Hirsch and Ashley H. Carter. 37: 90—1965
Scattering theory for one-dimensional problems. Mark Harrison and Robert Plutchok. 37: 84—1965

Letters to the Editor
General spreading-loss expression. Edward S. Eby and Lloyd T. Einstein. 37: 933—1965

Abstracts
Bearing stability in an ocean medium. R. J. Nielsen and M. C. Karamargin. 37: 1190—1965
Caustics and convergence zones in deep-water sound transmission. R. J. Urick. 37: 1191—1965

Statistics of sound multipaths. J. J. Martin. 37: 1191—1965

Subtitles

Doppler effect. D. E. Weston. 37: 122—1965

Patents

Sound velocity meter. Werner G. Neubauer. 37: 1171—1965

13.4 **Reflection. Echoes. Structures for Absorbing Sound in Water**

Papers

Deformation of an exponential pulse with a finite rise time in the region of total reflection. L. R. B. Duykers. 37: 1052—1965

Interference pattern observed in reflections from the ocean bottom. M. Vertner Brown and James H. Ricard. 37: 1033—1965

Phase distortion of a pulse caused by bottom reflection. Benjamin F. Cron and Albert H. Nuttall. 37: 486—1965

Reflection of low-frequency sonar signals from a smooth ocean bottom. H. P. Bucker, J. A. Whitney, G. S. Yee, and R. R. Gardner. 37: 1037—1965

Letters to the Editor

Total internal reflection of pulses in stratified media. I. Tolstoy. 37: 1153—1965

Abstracts

Attenuation-loss measurements in the SOFAR channel. B. Sussman, R. B. MacDonald, and W. G. Kanabis. 37: 1191—1965

Bearing stability in an ocean medium. R. J. Nielsen and M. C. Karamargin. 37: 1190—1965

Caustics and convergence zones in deep-water sound transmission. R. J. Urick. 37: 1191—1965

Detailed study of sound reflection from a layered ocean bottom. Paul Stangerup. 37: 1191—1965

Reproducibility of reflections from the bottom of the ocean. C. S. Clay and W. L. Liang. 37: 1191—1965

Statistics of sound multipaths. J. J. Martin. 37: 1191—1965

13.6 **Scattering. Reverberation in Water**

Papers

Propagation at short ranges of elastic waves from an impulsive source in a shallow fluid overlying a layered elastic solid. A. S. Victor, F. R. Spitznogle, and E. G. McLeroy. 37: 894—1965

Reflection of low-frequency sonar signals from a smooth ocean bottom. H. P. Bucker, J. A. Whitney, G. S. Yee, and R. R. Gardner. 37: 1037—1965

Scattering of acoustic waves by pressure fluctuations. Franklin Pollock. 37: 596—1965

Scattering theory for one-dimensional problems. Mark Harrison and Robert Plutchok. 37: 84—1965

Scattering theory, with applications to one-dimensional problems. Robert Plutchok and Mark Harrison. 37: 1056—1965

Letters to the Editor

Comment on two Papers concerning reverberation from the ocean floor. R. R. Goodman. 37: 174—1965

Temporal coherence of surface-scattered signals. R. R. Hartley. 37: 1147—1965

Abstracts

Analysis of underwater acoustic backscattering from a random surface. Lester R. LeBlanc and R. F. Hill. 37: 1191—1965

Deep-scattering-layer observations off Southern and Baja California. E. G. Barham and W. E. Batzler. 37: 1192—1965

Reverberation measurements of narrow-band noise power in a water tank. David Lubman. 37: 1209—1965

Scattering by n-element arrays of identical rigid spheres. Mary L. Harbold and Bruce Steinberg. 37: 1184—1965

13.7 **Radiation from Objects Vibrating under Water. Acoustical and Mechanical Impedance. (See also 5.3, 11.5, and 12.3z.)**

Papers

Diffraction constants of transducers. Robert J. Bobber. 37: 591—1965

Measurements of the resonant frequency of a bubble near a rigid boundary. S. D. Howkins. 37: 504—1965

Tuning resonant sound radiators to achieve a minimum acoustic Q. M. C. Junger and William Thompson, Jr. 37: 95—1965

Letters to the Editor

Tables for the mutual radiation resistance and reactance of aligned rectangular pistons in an infinite rigid baffle. Elizabeth M. Arase and Peter D. Hahn. 37: 531—1965

Theoretical model for mutual radiation resistance of small transducers at an air–water surface. Charles H. Sherman. 37: 532—1965

Use of directional probes for nearfield measurements. Alan H. Lubell. 37: 1150—1965

Abstracts

Generation of transient acoustic impulses, using a novel underwater spark sound source. R. A. Wagner and H. A. Wright. 37: 1177—1965

Underwater radiation from a finite homogeneous cylindrical shell. P. W. Smith, Jr., and Edward M. Kerwin, Jr. 37: 1213—1965

Use of toroidal wavefunctions for the free-flooding ring transducer. Charles H. Sherman and N. G. Parke. 37: 1213—1965

13.8 **Sound Generation by Liquid Motion, Bubbles, Turbulence, Splashes. (See also 13.12.)**

Abstracts

Damping constants and the definition of models for cavitation bubbles. H. G. Flynn. 37: 1182—1965

Influence of ocean bottom on explosion bubble-pulse period. David Epstein. 37: 1182—1965

Patents

Noise reducing flow control device. Robert R. Dahl and Howard L. Erickson. 37: 778—1965

Sonar wake detector. Raymond L. Steinberger and Charles L. Darner. 37: 576—1965

13.9 **Noise in Water, Ship Noise. Flow Noise, Biological Noises**

Papers

Some characteristics of 25-cps shallow-water ambient noise. Jack Willis and F. T. Dietz. 37: 125—1965

Vertical directionality of ambient noise in the deep ocean at a site near Bermuda. E. H. Axelrod, B. A. Schoomer, and W. A. Von Winkle. **37**: 77—1965

13.10 Underwater Macrosonics. Explosions. Distortion. (See also 14.2 and 12.5.)

Papers

Deformation of an exponential pulse with a finite rise time in the region of total reflection. L. R. B. Duykers. **37**: 1052—1965

Extension of the method of normal modes to sound propagation in an almost-stratified medium. Allan D. Pierce. **37**: 19—1965

Abstracts

Airblasts from underwater explosions at various depths. Charles I. Malme, Jaime R. Carbonell, and Ira Dyer. **37**: 1183—1965

Maxima and minima in the spectrum of an underwater charge. Marvin S. Weinstein and Ermine A. Christian. **37**: 1183—1965

Physical model for airblast generation by underwater explosions. Jaime R. Carbonell, Charles I. Malme, and Ira Dyer. **37**: 1183—1965

Propagation of underwater explosive shockwaves at long range. J. H. Stockhausen. **37**: 1191—1965

13.11 Instruments Relating to Underwater Sound

Abstracts

Periodic interferometer for measuring relative phase velocity of sound in fluids. Donald S. Moseley. **37**: 1209—1965

Reverberation measurements of narrow-band noise power in a water tank. David Lubman. **37**: 1209—1965

Patents

Acoustic torpedo warhead and transducer apparatus. John D. Brooks. **37**: 778—1965

Sonar echo simulator. Myron L. Feistman, David A. Reinhart, and Robert F. Kantner. **37**: 966—1965

Sonic communication system. Jeff E. Freeman. **37**: 966—1965

Sonic fish bait. Harold E. Stram. **37**: 576—1965

Sonic wave conductor. Preston W. Smith, Jr., and Miguel C. Junger. **37**: 966—1965

Underwater acoustic intensity meter. George L. Boyer. **37**: 1171—1965

Underwater device having an acoustically isolated nose section. Vance F. Boswell and James C. Shaw. **37**: 214—1965

13.11n Navigational Instruments Using Underwater Sound. Underwater-Listening and Echo-Ranging Devices. Sonar

Papers

Comparison of theoretical and experimental values of spatial correlation. Benjamin F. Cron, Beverly C. Hassell, and Frank J. Keltonic. **37**: 523—1965

Correlation loss in echo ranging. D. E. Weston. **37**: 119—1965

Experimental liquid-filled transducer array for deep-ocean operation. Paul M. Kendig and Hugh J. Clarke. **37**: 99—1965

Letters to the Editor

Use of directional probes for nearfield measurements. Alan H. Lubell. **37**: 1150—1965

Abstracts

Application of the Tchebyshev polynomial to element reduction of linear arrays. D. F. Dence and J. E. Spence. **37**: 1184—1965

Effect of Thevenin equivalent internal impedance on velocity control and acoustic power of planar broadside arrays. David T. Porter. **37**: 1183—1965

Optimum-array gain for directional noise. C. J. Becker and Benjamin F. Cron. **37**: 1184—1965

Role of acoustic transients in the radiation loading of pulsed CW transducer arrays. M. C. Junger and William Thompson, Jr. **37**: 1183—1965

Subtitles

Underwater arrays. E. H. Axelrod, B. A. Schoomer, and W. A. Von Winkle. **37**: 78—1965

Patents

Acoustic water path simulator. Richard K. Jacobs. **37**: 778—1965

Directional hydrophone system. Peter G. Bartlett. **37**: 966—1965

Doppler navigation systems. Edwin E. Turner. **37**: 408—1965

Echo-sounding equipment. Roy William George Haslett. **37**: 576—1965

High speed tow sonar system. Frank N. Piasecki. **37**: 1171—1965

Interlaced video display of sea bottom using sonic energy. Charles Howard Jones. **37**: 214—1965

Method of making a commutator strip plate. Edward W. Showalter, Jr. **37**: 967—1965

Reverberation controlled gain amplifier. John W. Flowers and Elmer J. Wade. **37**: 215—1965

Signal analysis method and system. George F. Asbury, Sr. **37**: 1172—1965

Sonobuoy apparatus. Trevor Clark. **37**: 576—1965

Support structure for underwater sensing equipment. Henry C. Beck, Harold E. Fowler, and Falco J. Delmerico. **37**: 1172—1965

Ultrasonic submarine sounding equipments. Alexandre Boudigues. **37**: 778—1965

Underwater signaling apparatus. Joseph D. Richard. **37**: 967—1965

Errata

Phase distortion of reflected sonar pulses [J. Acoust. Soc. Am. **36**, 214–215(L) (1964)]. W. Abramowitz. **37**: 173—1965

13.11t Transducer for Underwater Sound. Transducer Calibration. (See also 5.18.)

Papers

Acoustic-backing techniques for transducers and radiators. W. J. Toulis. **37**: 250—1965

Diffraction constants of transducers. Robert J. Bobber. **37**: 591—1965

Experimental liquid-filled transducer array for deep-ocean operation. Paul M. Kendig and Hugh J. Clarke. **37**: 99—1965

Some characteristics of 25-cps shallow-water ambient noise. Jack Willis and F. T. Dietz. **37**: 125—1965

Letters to the Editor

Comments on "Acoustic-backing techniques for transducers and radiators," by W. J. Toulis. L. H. Royster. **37**: 1152—1965

Theoretical model for mutual radiation resistance of small transducers at an air–water surface. Charles H. Sherman. **37**: 532—1965

Abstracts

Directivity of a transducer mounted inside a thin shell. James E. Barger. **37**: 1178—1965

Experimental studies in underwater directional communication. B. B. Bauer nad E. Torick. **37**: 1184—1965

Pressure vessel for farfield SONAR transducer calibration. Charles E. Green. **37**: 1209—1965

Role of acoustic transients in the radiation loading of pulsed CW transducer arrays. M. C. Junger and William Thompson, Jr. **37**: 1183—1965

Study of underwater horns—single-loading exponential and pseudohemispherical horns. Douglas Muster and A. Christensen. **37**: 1184—1965

Calibration and analysis of underwater earphones. B. B. Bauer and E. Torick. **37**: 1210—1965

Underwater-sound transducer with a conical-shell radiation pattern. D. R. Sanders. **37**: 1178—1965

Patents

Elastic wave radiator and detector. Miguel C. Junger. **37**: 576—1965

Hydroacoustic oscillator techniques. John V. Bouyoucos. **37**: 576—1965

Lightweight towed transducer housing. Sydney T. Knott and Warren E. Witzell. **37**: 577—1965

Oscillator. Wilbur T. Harris. **37**: 778—1965

Ring-shaped transducer. Wilbur T. Harris. **37**: 408—1965

Sonic pulse generator. Ross Jay Miller. **37**: 1172—1965

Transducer. Gordon B. Hayes. **37**: 408—1965

Transducer construction. Wilbur T. Harris. **37**: 1172—1965

Underwater sound apparatus. Theodor F. Hueter. **37**: 408—1965

Underwater transducer. Orville L. Polly, Charles J. Link, Bernard Farmen, and Larry A. Pyatt. **37**: 967—1965

Underwater transducer element. Sam Hanish. **37**: 967—1965

13.12 **Acoustic Cavitation**

Papers

Measurements of the resonant frequency of a bubble near a rigid boundary. S. D. Howkins. **37**: 504—1965

Rectified diffusion during nonlinear pulsations of cavitation bubbles. Anthony Eller and H. G. Flynn. **37**: 493—1965

Abstracts

Lifetimes of empty cavities moving through a liquid. Anthony Eller and H. G. Flynn. **37**: 1182—1965

14 **AEROACOUSTICS, MACROSONICS**

14.2 **Macrosonic Propagation. Distortion of the Wavefront. Shock Waves. Blast Waves. Supersonic Boom**

Papers

Propagation of finite-amplitude ultrasound in a relaxing liquid. R. P. Ryan, C. R. Attanasio, and Robert T. Beyer. **37**: 602—1965

Abstracts

Contribution to the theory of finite-amplitude acoustic fields. V. G. Welsby. **37**: 1182—1965

Lossless propagation of one-dimensional, finite-amplitude sound waves. Edwin D. Banta. **37**: 1181—1965

Plane piston at finite amplitude: second harmonics. A .O. Williams, Jr., F. Ingenito, and P. J. Westervelt. **37**: 1181—1965

Propagation of plane compressional waves at finite amplitude in real fluids. Y. F. Bow and E. A. Hiedemann. **37**: 1181—1965

Propagation of stress waves in linear viscoelastic solids. H. Kolsky. **37**: 1206—1965

Subtitles

Shock waves. M. G. Cottis. **37**: 35—1965

14.3 **Gross Movement of Matter by Sound Waves. Acoustic Streaming**

Papers

Parametrically excited surface waves. R. P. Brand and Wesley L. Nyborg. **37**: 509—1965

Letters to the Editor

Fixing of dust figures in a Kundt's tube. H. Piersa. **37**: 533—1965

Abstracts

Effect of localized sound on an electrode reaction. W. E. Rowe and Wesley L. Nyborg. **37**: 1214—1965

14.4 **Radiation Pressure. (See also 5.14.)**

Letters to the Editor

Radiation-pressure forces in terms of impedance, admittance, and scattering matrices. W. E. Smith. **37**: 932—1965

Abstracts

Radiation pressure calibration using torsion balance and spatial integration. Thomas D. Sachs. **37**: 1209—1965

14.5 **Interaction of Sound with Sound**

Letters to the Editor

Nonlinear interaction of two sound beams. J. Naze and S. Tjøtta. **37**: 174—1965

14.6 **Interaction of Fluid Motion and Sound**

Papers

Acoustic losses of a resonator with steady gas flow. Colin Gordon and P. W. Smith, Jr. **37**: 257—1965

Propagation of acoustic-gravity waves in a temperature- and wind-stratified atmosphere. Allan D. Pierce. **37**: 218—1965

Letters to the Editor

Refraction of sound from a point source placed in an air jet. J. Atvars, L. K. Schubert, and H. S. Ribner. **37**: 168—1965

14.7 **Generation of Sound by Fluid Flow**

Papers

Some experiments concerning the hole and ring tone. R. C. Chanaud and Alan Powell. **37**: 902—1965

Surface and volume sound from boundary layers. William C. Meecham. **37**: 516—1965

Letters to the Editor

Aspects of edgetone experiment and theory. Alan Powell. **37**: 535—1965

Abstracts

Acoustic power radiated by a source of sound in a duct. George C. Maling, Jr. **37**: 1196—1965

Aerodynamic noise from uncased centrifugal fan rotors. R. C. Chanaud. **37**: 1197—1965

Experimental investigation of boundary-layer-induced vibrations. Michael E. McCormick and Mark Harrison. **37**: 1197—1965

Transmission of sound in a moving fluid. C. Hemond and T. Zadnik. **37**: 1196—1965

Errata

Flow excitation of cylindrical shells and associated coincidence effects [J. Acoust. Soc. Am. **36**: 878–884 (1964)]. J. V. Rattayya and M. C. Junger. **37**: 387—1965

14.8 Aerothermoacoustics

Papers

Acoustic losses of a resonator with steady gas flow. Colin Gordon and P. W. Smith, Jr. **37**: 257—1965

Abstracts

Pressure disturbances of impulsive line heat sources. W. J. Remillard. **37**: 1217—1965

15 ACOUSTIC SIGNAL PROCESSING

15.1 General, Unclassified

Papers

Comparison of theoretical and experimental values of spatial correlation. Benjamin F. Cron, Beverly C. Hassell, and Frank J. Keltonic. **37**: 523—1965

Correlation loss in echo ranging. D. E. Weston. **37**: 119—1965

Theory of signal detectability: deferred-decision theory. T. G. Birdsall and R. A. Roberts. **37**: 1064—1965

Letters to the Editor

Response of a narrow-band filter to a linear FM pulse with large time-bandwidth product. John Sinnott. **37**: 388—1965

15.2 Statistical Theory of Signals

Papers

Adjusting the method of adjustment: SD vs DL. B. L. Cardozo. **37**: 786—1965

Approximation to the array signal-gain fluctuation spectrum. Arthur Shapiro. **37**: 1075—1965

Detection of a Doppler-invariant FM signal by means of a tapped delay line. R. O. Rowlands. **37**: 608—1965

Linear modeling of long underwater acoustic paths. W. F. Walker. **37**: 1091—1965

Theory of signal detectability: deferred-decision theory. T. G. Birdsall and R. A. Roberts. **37**: 1064—1965

Letters to the Editor

Comments on "Reception characteristics of a linear array in a random transmission medium" by Lord and Murphy. Derrill J. Bordelon. **37**: 387—1965

Rating scales in detection experiments. W. D. Larkin. **37**: 748—1965

Abstracts

Coherence in multiple random processes. Henry Cox. **37**: 1185—1965

Use of abbreviated series to describe non-Gaussian random signals. H. Himelblau and L. P. Bockemohle. **37**: 1185—1965

15.3 Space–Time Processing Methods. Automatic Recognition

Papers

Pseudorandom signal-correlation methods of underwater acoustic research. I: Principles. J. L. Stewart, W. B. Allen, R. M. Zarnowitz, and M. K. Brandon. **37**: 1079—1965

Random bearing errors in split-beam systems. Theron Usher, Jr. **37**: 912—1965

Letters to the Editor

Processing against reverberation on a moving platform. E. C. Westerfield and M. K. Brandon. **37**: 389—1965

Abstracts

Experimental studies in underwater directional communication. B. B. Bauer and E. Torick. **37**: 1184—1965

Theory of spatial processing. Philip L. Stocklin. **37**: 1184—1965

15.4 Displays and Sensory Pattern Recognition. Learning Machines

Patents

Device for reproducing acoustic images. Edward Emanuel Sheldon. **37**: 1172—1965

15.5 Instrumentation

Papers

Optical-correlation detector for the audio frequency range. J. K. Parks. **37**: 268—1965

16 BIOACOUSTICS

16.1 General, Unclassified

Book Reviews

Pulsatile Blood Flow. E. O. Attinger, Editor. (Reviewed by William J. Fry.) **37**: 768—1965

16.2 Acoustic Characteristics of Biological Materials. Tissues. Microstructures from Macromolecular Species to Cellular Level

Abstracts

Ultrasonic absorption by protein solutions. Peter D. Edmonds. **37**: 1195—1965

Ultrasonic absorption in aqueous solutions of high-molecular-weight polysaccharides. S. A. Hawley, L. W. Kessler, and Floyd Dunn. **37**: 1195—1965
Ultrasonic absorption in biological media. Floyd Dunn. **37**: 1195—1965

16.4 **Mechanisms of Action of Acoustic Energy on Biological Systems. Physical Processes. Sites of Action**

Abstracts
Changes in behavior of mosses treated with ultrasound. Hubert J. Dyer. **37**: 1195—1965
Disruption of microorganisms by ultrasound—a cooling device for use with the sonifier. Theodore Rosett. **37**: 1196—1965
Effect of ultrasound on permeability of cell membrane. Dale C. Braungart. **37**: 1195—1965
Effects of ultrasound on the ultrastructure of liver cells of the mouse. Joseph C. Curtis. **37**: 1196—1965
Injury induced in isolated muscle fiber by locally applied ultrasound. Walter L. Wilson, Floyd J. Wiercinski, and Ronald M. Schnitzler. **37**: 1217—1965
Physical mechanisms for biological effects of sound. Wesley L. Nyborg, C. Chuongvan, and H. P. Claes. **37**: 1195—1965
Some biological effects of ultrasound. David E. Hughes. **37**: 1195—1965
Ultrasonic absorption by protein solutions. Peter D. Edmonds. **37**: 1195—1965
Ultrasonic absorption in aqueous solutions of high-molecular-weight polysaccharides. S. A. Hawley, L. W. Kessler, and Floyd Dunn. **37**: 1195—1965
Ultrasonic absorption in biological media. Floyd Dunn. **37**: 1195—1965

16.5 **Use of Acoustic Energy (with or without Other Forms of Energy) in Studies of Structure and Function of Biological Systems**

Abstracts
Periodicity patterns of bullfrog and cat neurons. George Moushegian, Allen Rupert, and Ted L. Langford. **37**: 1200—1965
Single-unit activity in the inferior colliculus of the guinea pig. Ricardo F. Marseillan and J. Ryland Mundie. **37**: 1200—1965
Subharmonic generation in the peripheral auditory system of rodents. Peter J. Dallos and Craig O. Linnell. **37**: 1201—1965

16.8 **Medical Diagnosis with Acoustics**

Abstracts
Correlation of subsonic, audible, and ultrasonic recordings in cardiac diagnosis. B. Kingsley, B. L. Segal, and W. Likoff. **37**: 1199—1965
Interpretation of results obtained in medical ultrasonic tomography. John F. Belford and R. L. Uphoff. **37**: 1200—1965

News
International Symposium on Ultrasonic Diagnostics in Ophthalmology. Peter Eisenberg. **37**: 542—1965
Symposium on Ultrasound as a Diagnostic and Surgical Tool. **37**: 186—1965

16.9 **Medical Use of Ultrasonics for Tissue Modification (Permanent and Temporary)**

News
Symposium on Ultrasound as a Diagnostic and Surgical Tool. **37**: 186—1965

INDEX TO VOLUME 38

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How To Use This Index

This volume index is similar in form to the cumulative indexes of this JOURNAL, covering, respectively, Volumes 1–10, 11–20, 21–30, and 31–35, and it is composed of three main divisions:

1. **Author Index** to Volume 38
2. **Inventor Index to Acoustical Patents,** Volume 38
3. **Analytic Subject Index** to Volume 38

The Subject Index to Volume 38 of *The Journal of the Acoustical Society of America* lists the titles of all items as they have appeared in the JOURNAL. They are grouped under the 16 major section headings as listed in the **Classification of Subjects,** which follows immediately after these paragraphs. Each of these sections is subdivided into a considerable amount of decimally numbered subjects. Each subject is further subdivided into 8 parts entitled, respectively,

1. **Papers**
2. **Letters to the Editor**
3. **Abstracts**
4. **Subtitles**
5. **Patents**
6. **Book Reviews**
7. **News**
8. **Errata**

Papers catalogues alphabetically by title those JOURNAL papers covered by the specific area of the decimal heading under which these are listed. **Abstracts** lists alphabetically the titles of papers presented at meetings. **Subtitles** includes some subtitles from Papers whose titles do not fully describe all the areas covered therein; specially "devised" subtitles when such did not appear in the Paper itself; and some Figure captions. Thus, while the Subtitles portion of the Index is informal, it is hoped that it will increase the probability of finding the desired information quickly. **Patents** lists alphabetically the titles of all Patents as they have appeared in the JOURNAL.

References on most subjects can be located immediately by a logical use of the Classification of Subjects. In the case where the reference sought is of an unusual character, where there is uncertainty as to the specific area under which it might have been classified, it can usually be located quite quickly by the process of eliminating those sections and subjects under which it is quite improbable that the reference might have been listed. Very often, items have been crossreferenced. Obviously, the author or inventor indexes are more convenient than the Subject Index when one knows the name of the author of the paper or the inventor of the patent of interest.

The reader, or his librarian, should go over the list of Errata (Section 0.1) and either make the indicated corrections in the original papers in the JOURNAL or enter a note alongside the title of the original paper itself: "See Erratum, Vol. *XX*, p. *xxx*.

The *References to Contemporary Papers on Acoustics* are identified in each issue of the JOURNAL where they appear by the same decimal numbers listed in the Classification of Subjects, and may be consulted for references in other journals than our own. In Volume 38, these references can be found beginning on pages 159, 497, and 891.

Classification of Subjects

This classification supersedes all previous ones; there have been major changes and additions.

0 GENERAL
- 0.1 Errata
- 0.2 Conferences, Lectures, and Announcements, not of the Acoustical Society of America
- 0.3 Nonacoustical Theories
- 0.4 Nonacoustic Devices
- 0.5 General Acoustics Notes
- 0.6 Biographical, Historical, and Personal Notes, not of the Acoustical Society of America
- 0.7 Editorials

1 ACOUSTICAL SOCIETY OF AMERICA
- 1.1 General, Unclassified
- 1.2 Constitution and Bylaws
- 1.3 History
- 1.4 Honorary Members
- 1.5 Meetings
- 1.6 Members and Membership Lists
- 1.7 Committee Activities
- 1.8 Prizes, Medals, and Awards
- 1.9 Regional Chapters

2 ARCHITECTURAL ACOUSTICS
- 2.1 General, Unclassified
- 2.2 Auditorium Design. (See also 7.6.)
- 2.3 Studies of Existing Auditoria and Acoustic Enclosures
- 2.4 Sound Absorption: Theory and Methods of Measurement of. (See also 2.5.)
- 2.5 Materials for Sound Absorption. Values of Absorption Coefficients and Acoustic Impedances
- 2.6 Noise Reduction by Increased Room Absorption
- 2.7 Reverberation and Echoes. (See also 2.3, 2.4, 2.8, 2.9, 2.10, 11.2, 11.4, and 11.7.) Normal Modes in Rooms. Diffusivity. Frequency Response. Subjective Effects
- 2.8 Reverberation-Measuring Instruments. (See also 2.7 and 5.15.)
- 2.9 Sound Transmission through Walls, Theory and Methods of Measurement of. (See also 2.10.)

2.10 Sound-Insulating Structures. Values of Transmission Coefficients. (See also 7.6.)
2.11 Vibration-Insulating Supports in Building Acoustics. (See also 5.21 and 12.3i.)
2.12 Damping of Panels
2.13 Anechoic-Chamber Design. Wedges
2.14 Sound-Reinforcement Systems for Rooms
2.15 Computer Simulation of Acoustics in Rooms

3 BOOKS, BIBLIOGRAPHIES, AND SURVEYS

3.1 Books and Book Reviews
3.2 Bibliographies
3.3 Patents
3.4 Surveys, Historical and Philosophical Literature

4 PHYSIOLOGICAL AND PSYCHOLOGICAL ACOUSTICS

4.1 General, Unclassified
4.2 Anatomy and Physiology of the Ear
4.2.1 Middle-Ear Mechanics
4.2.2 Cochlear Mechanics
4.2.3 Models of the Ear
4.2.4 Cochlear Electrophysiology
4.2.5 Auditory Nerve and Central Pathways
4.3 Binaural Hearing. Localization
4.4 Deafness. (See also 5.5.)
4.4.5 Auditory Fatigue, Temporary Threshold Shift
4.5 Instruments Relating to Hearing and for the Testing of Hearing. (See also 5.5.)
4.6 Loudness, Threshold Determinations
4.7 Masking. (See also 5.5.)
4.8 Phase Effects. (See also 4.3.)
4.9 Pitch. Absolute Pitch
4.10 Subjective Tones
4.11 Theories of Hearing
4.12 Timbre
4.13 Ear Acoustical Impedance
4.14 Use of Ear Protectors, Earplugs
4.15 Perception of Signals
4.16 Vibration and Tactile Senses

5 ACOUSTICAL INSTRUMENTS AND APPARATUS. (See also 2.8, 4.5, 9.6, 10.3, 12.3, 12.3p, 12.3z, 13.11, 13.11n, and 13.11t.)

5.1 General, Unclassified
5.2 Amplifiers and Attenuators
5.3 Acoustic-Impedance Measurement. (See also 11.5 and 12.3z.)
5.4 Analyzers and Filters, Acoustic and Electric. Oscillographs. Acoustic Delay Lines and Resonators. (See also 5.15 and 12.3f.)
5.5 Audiometers. (See also 4.4 and 4.5.)
5.6 Broadcasting (Radio and Television)
5.7 Ear Protectors and Earplugs. (See also 4.14.)
5.8 Loudspeakers, Horns, Measurements. Practical Sound Sources. (See also 5.13, 5.17, and 5.18.)
5.9 Microphones. Microphone-Calibration Equipment and Techniques. (See also 5.18, 12.3p, and 13.11t.)
5.10 Navigational Instruments Using Air Sound. Altitude-Measuring Instruments. Sound Ranging. (For Underwater Ranging, see 13.11n.)
5.11 Oscillators, Electrical and Mechanical
5.12 Phase Meters
5.13 Sound-Reproducing Systems, Including Public-Address Systems, Stereophonic Reproduction
5.14 Rayleigh Disks. Radiometers
5.15 Sound-Level Meters. Level Recorders. Sound-Pressure Measurement. (See also 5.4.)
5.16 Sound Recording and Reproducing. General
5.16d Mechanical Recording and Reproducing
5.16f Photographic Recording and Reproducing
5.16m Magnetic Recording and Reproducing
5.16s Electrostatic Recording and Reproducing
5.17 Telephones, Telephone Earphones. (See also 5.13.) Intercommunication Systems
5.18 Transducing Principles, Structures and Materials, General. (See also 5.8, 5.9, 5.17, 10.3, 12.3p, 13.7, and 13.11t.)
5.18d Electrodynamic Transducers
5.18e Electrostatic Transducers
5.18f Magnetostrictive Transducers
5.18g Electromagnetic Transducers
5.18h Feedback Transducers
5.18p Piezoelectric Transducers, Ferroelectrics
5.19 Tuning Forks, Frequency Standards, Frequency-Measuring and -Recording Instruments. Time Standards. Chronographs
5.20 Tone and Wave Synthesizers
5.21 Vibration Devices. Devices for Generating or Damping Vibrations. (See also 12., 12.3, 12.3i, 12.3p, and 12.3v.)

6 MUSIC AND MUSICAL INSTRUMENTS

6.1 General, Unclassified
6.2 Bells, Xylophones. Other Instruments having Rigid Vibrators
6.3 Brass Wind Instruments (Lip-Vibrated)
6.4 Drums and Other Membranophonic Instruments
6.5 Pipe Organs
6.6 Pianos and Other Keyboard Stringed Instruments
6.7 Violin Family. Stringed Instruments, Except Keyboard Type
6.8 Wood Winds
6.9 Electrical Musical Instruments
6.10 Reed Organs. Accordions, Harmonicas
6.11 Singing
6.12 Intonation. Vibrato. Musical Scales. Musical Composition
6.13 Electronic Music

7 NOISE AND NOISE CONTROL

7.1 General, Unclassified
7.2 Annoyance. Effect of Noise on Human Beings
7.4 Community Noise
7.5 Noise Spectra
7.6 Noise in Buildings. (See also 2.2.)
7.7 Machinery Noise. Mufflers. Noise Silencers
7.8 Noise Generators (Solid, Liquid, and Gaseous). Sirens
7.10 Aerodynamic Noise. Jet Noise

8 STANDARDS

8.1 General, Unclassified

9 SPEECH COMMUNICATION

9.1 General, Unclassified
9.2 Anatomy and Physiology of the Larynx and Vocal Tract
9.3 Acoustic Analysis of Speech
9.4 Speech Synthesis
9.5 Perception of Speech and Speechlike Sounds. (See also 4.15.)
9.6 Measures of Speech Intelligibility, Quality, Information Content
9.7 Phonetics, Linguistics, Statistics of Language
9.8 Systems for Speech Transmission. Analysis–Synthesis Telephony, Speech Coding
9.9 Instruments for Speech Measurement
9.10 Machine Recognition of Speech

10 ULTRASONICS

10.1 General, Unclassified
10.2 Physical Effects of Ultrasonic Waves. Optical Diffraction. Ultrasonic Processing.
10.3 Ultrasonic Instruments. (See also 5.18.)
10.4 Gases, Ultrasonic Velocity, Dispersion, Absorption. (See also 11.3.)
10.5 Liquids, Ultrasonic Velocity, Dispersion, Absorption. (See also 13.2 and 13.3.)
10.6 Solids, Ultrasonic Velocity, Dispersion, Absorption
10.8 Chemical Effects of Ultrasonic Waves
10.9 Biological Effects of Ultrasonic Waves
10.10 Ultrasonic Relaxation Processes in Solids, Liquids, and Gases

11 RADIATION AND SCATTERING

11.1 General, Unclassified
11.1.5 Analogies
11.2 Reflection, Refraction, Diffraction, and Interference of Sound Waves
11.3 Velocity and Attenuation of Sound Waves. (See also 10.4, 10.5, 10.6, 13.2, and 13.3.)
11.4 Waves in Bounded Media
11.5 Radiation from Vibrating Objects in Air and Other Gases. Acoustic Impedance. Sources of Sound. (See also 5.3, 12.3z, and 13.7.)
11.6 Wave Propagation in Tubes
11.7 Mathematical Theory of Wave Propagation. Ray Acoustics. (See also 11.1.5.)
11.8 Physical Effects of Sound. (See also 12.11.)
11.9 Sounds in the Atmosphere

12 MECHANICAL VIBRATIONS AND SHOCK. (See also 5., 11., and 16.)

12.1 General, Unclassified
12.3 Instruments and Apparatus Relating to Vibration and Shock. (See also 5.3, 5.4, 5.9, 5.21.)
12.3f Mechanical Filters. (See also 5.4.)
12.3i Vibration Isolators, Attenuators, and Dampers. (See also 2.11 and 5.21.)
12.3p Vibration Pickups and Indicators. Calibration Equipment and Techniques. (See also 5.9, 5.18, and 13.11t.)
12.3v Vibration Generators. Shake Tables. (See also 5.21.)
12.3z Mechanical-Impedance Measurement. (See also 5.3 and 11.5.)
12.5 Shock. (See also 14.2 and 13.10.)
12.7 Theory of Vibrating Systems. (See also 11.7 and 11.1.5.)
12.9 Biological Effects of Vibration and Shock. (See also 10.9, 16.2, and 16.3.)
12.10 Seismology. Geophysical Prospecting. Seismographs
12.11 Effect of Sound on Structures. Fatigue. (See also 11.8.)
12.12 Random Vibration. (Started 1965.)

13 UNDERWATER SOUND

13.1 General, Unclassified
13.2 Propagation of Sound in Water. Attenuation. Fluctuation
13.3 Velocity of Sound in Water. Refraction. Doppler Effect
13.4 Reflection. Echoes. Structures for Absorbing Sound in Water
13.5 Interference. Diffraction
13.6 Scattering. Reverberation in Water
13.7 Radiation from Objects Vibrating under Water. Acoustical and Mechanical Impedance. (See also 5.3, 11.5, and 12.3z.)
13.8 Sound Generation by Liquid Motion, Bubbles, Turbulence, Splashes. (See also 13.12.)
13.9 Noise in Water, Ship Noise. Flow Noise, Biological Noises
13.10 Underwater Macrosonics. Explosions. Distortion. (See also 14.2 and 12.5.)
13.11 Instruments Relating to Underwater Sound
13.11n Navigational Instruments Using Underwater Sound. Underwater-Listening and Echo-Ranging Devices. Sonar
13.11t Transducers for Underwater Sound. Transducer Calibration. (See also 5.18.)
13.12 Acoustic Cavitation

14 AEROACOUSTICS. MACROSONICS

14.1 General, Unclassified
14.2 Macrosonic Propagation. Distortion of the Wavefront. Shock Waves. Blast Waves. Supersonic Boom
14.3 Gross Movement of Matter by Sound Waves. Acoustic Streaming
14.4 Radiation Pressure. (See also 5.14.)
14.5 Interaction of Sound with Sound
14.6 Interaction of Fluid Motion and Sound
14.7 Generation of Sound by Fluid Flow
14.8 Aerothermoacoustics

15 ACOUSTIC SIGNAL PROCESSING

15.1 General, Unclassified
15.2 Statistical Theory of Signals
15.3 Space–Time Processing Methods. Automatic Recognition
15.4 Displays and Sensory Pattern Recognition. Learning Machines
15.5 Instrumentation

16 BIOACOUSTICS

16.1 General, Unclassified
16.2 Acoustic Characteristics of Biological Materials. Tissues. Microstructures from Macromolecular Species to Cellular Level
16.3 Acoustic Measurement Methods in Biological Systems and Media
16.4 Mechanisms of Action of Acoustic Energy on Biological Systems. Physical Processes. Sites of Action
16.5 Use of Acoustic Energy (with or without Other Forms of Energy) in Studies of Structure and Function of Biological Systems
16.6 Sound Generation and Detection by Animals
16.7 Role of Acoustic Energy in the Integrated Behavior of Animals
16.8 Medical Diagnosis with Acoustics
16.9 Medical Use of Ultrasonics for Tissue Modification (Permanent and Temporary)

Author Index to Volume 38

Numerals in boldface type refer to volume numbers. (A) designates Abstract; (L) designates Letter to the Editor; (T) designates Title only; (AN) designates Acoustical News. A separate Inventor Index to Acoustical Patents appears at the end of the regular Author Index.

A

Abstein, Henry T. (see Curtis, Allen J.). **38**: 925(A)—1965

Adams, Carl E. Review of *Mechanics of Solids* by Grover L. Rogers. **38**: 687—1965

Adams, William B. (see Kletsky, Earl J.). **38**: 916(A)—1965

Albers, Vernon M. *Underwater Acoustics Handbook II* reviewed by William S. Cramer. **38**: 1073—1965

Allen, W. B. (see Germano, J. F.). **38**: 1031—1965

Amba-Rao, Chintakindi L. Vibration of partially fixed beams carrying an arbitrary number of concentrated masses. **38**: 942(A)—1965

Arase, Elizabeth M. and T. Arase. Ambient-sea-noise correlation. **38**: 920(A)—1965

—— **and T. Arase.** Correlation of ambient noise in the ocean. **38**: 146(L)—1965

Arase, T. (see Arase, Elizabeth M.). **38**: 146(L), 920(A)—1965

Armenàkas, Anthony E. Torsional waves in composite rods. **38**: 439—1965

Arnold, James S. Modulated combustion (Dragon) loudspeaker. **38**: 416—1965

Artman, Robert A. Ultrasonic internal conical refraction. **38**: 931(A)—1965

Aylsworth, R. (see Dixon, N. R.). **38**: 941(A)—1965

B

Baals, Donald D. and Willard F. Foss, Jr. Assessment of the sonic-boom problem for future air-transport vehicles. **38**: 914(A)—1965

Backus, John. Wall vibrations in organ pipes and their effect on tone. **38**: 912(A)—1965

Baker, Donald J. Listener judgments of motor-perceptual characteristics of bisyllable nonsense words. **38**: 923(A)—1965

Bakhru, K. and A. Berman. Attenuation of acoustic energy propagating in the ocean. **38**: 918(A)—1965

—— **and A. Berman.** Propagation of acoustic energy in a time-varying inhomogeneous medium. **38**: 919(A)—1965

Barger, James E. Sound transmission through a periodically supported thin plate. **38**: 936(A)—1965

Barker, P. H. (see Kibblewhite, A. C.). **38**: 629—1965

Barnard, G. R. and K. McCormack. Propagation of short-wavelength acoustic waves through an inhomogeneous medium. **38**: 287—1965

Barnett, Ralph L. (see Liber, Theodore). **38**: 915(A)—1965

Barnett, T. (see Moray, Neville). **38**: 196—1965

Barron, Fred E. (see Lybarger, Samuel F.). **38**: 922(A)—1965

Bartberger, Charles L. (see Russo, Donato M.). **38**: 183—1965

Bates, A. (see Moray, Neville). **38**: 196—1965

Batzler, W. E. and R. J. Vent. Volume-scattering measurements at 12 kc/sec in the Western Pacific. **38**: 932(A)—1965

Bauer, B. B. Equivalent circuit of a tube or spring. **38**: 882(L)—1965

Becker, E. Carl H. Mechanical-impedance characteristics at ends of a rockdrill rod. **38**: 239—1965

Bedarf, Erwin W. (see Sidley, Norman A.). **38**: 11, 1050—1965

Benade, A. H. Resonance-absorption cross section of a pipe organ. **38**: 780—1965

Beranek, Leo L. Review of *Collected Papers on Acoustics* by Wallace Clement Sabine. **38**: 496—1965

Berktay, H. O. Nonlinear interaction of two sound beams. **38**: 480(L)—1965

Berman, A. (see Bakhru, K.). **38**: 918(A), 919(A)—1965

Beyer, Robert T. (see Coppens, A. B.). **38**: 797—1965

Bhatia, A. B. Temperature coefficients of relaxed and unrelaxed bulk moduli for pressure-induced relaxation processes. **38**: 668(L)—1965

Bhimani, B. V. and R. Mitchell. Operational relation between the phonetic forms of elementary words. **38**: 934(A)—1965

Bies, David Alan. Model study of panel response to boundary-layer pressure fluctuations. **38**: 926(A)—1965

Bilger, Robert C. Correlation between multiple observers in correlated and independent noise. **38**: 928(A)—1965

Biot, Maurice A. *Mechanics of Incremental Deformations* reviewed by Warren P. Mason. **38**: 688—1965

Birdsall, T. G. MIMI multipath measurements. **38**: 919(A)—1965

Blackstock, David T. Transient solution for sound in a viscous fluid. **38**: 931(A)—1965

Blaik, Maurice and Ermine A. Christian. Near-surface measurements of deep explosions. I. Pressure pulses from small charges. **38**: 50—1965

—— (see Christian, Ermine A.). **38**: 57—1965

Blitz, J. *Fundamentals of Ultrasonics* reviewed by Martin Greenspan. **38**: 158—1965

Bluhm, Joseph I. and Donald Neal. Rotationally symmetric, transient response of a small-angle truncated conical shell owing to a moving pressure front. **38**: 608—1965

Bogdanoff, J. L. Mean-square approximate systems and their application in estimating response in complex disordered linear systems. **38**: 244—1965

—— **and S. J. Citron.** Experiments with an inverted pendulum subject to random parametric excitation. **38**: 447—1965

Bourbon, Walter T. (see Watson, Charles S.). **38**: 667(L)—1965

Bowman, Howard S. Infrasonic-noise power level and wind-velocity correlation study. **38**: 920(A)—1965

—— (see Smith, E. L.). **38**: 922(A)—1965

Boyles, C. A. Theory of focusing plane waves by spherical, liquid lenses. **38**: 393—1965

Brand, R. S. (see Nemergut, P. J.). **38**: 262—1965

Brand, Susan L. (see Pickett, J. M.). **38**: 923(A)—1965

Breazeale, M. A. (see Gauster, W. B.). **38**: 927(A)—1965

—— (see Van Buren, A. L.). **38**: 931(A)—1965

Brey, Mary E. (see Lord, Norman W.). **38**: 313—1965

Bricker, Peter D. Technique for objective measurement of speech levels. **38**: 361(L)—1965

—— **and S. Pruzansky.** Temporal effects in talker identification. **38**: 924(A)—1965

Brokaw, Sonia P. (see Singh, Sadanand). **38**: 923(A)—1965
Brown, A. E. Measurement of auditory thresholds. **38**: 86—1965
Brown, R. F. and G. W. McMahon. Properties of transducer ceramics under maintained planar stress. **38**: 570—1965
Bucker, H. P. and Halcyon E. Morris. Normal-mode intensity calculations for a constant-depth shallow-water channel. **38**: 1010—1965
Buffum, F. (see Slates, R.). **38**: 921(A)—1965
Buining, E. (see Zwislocki, Jozef J.). **38**: 938(A)—1965
Burke, James E. and Victor Twersky. Elementary results for scattering by large ellipsoids. **38**: 589—1965
Burnett, E. D. (see Corliss, Edith L. R.). **38**: 922(A)—1965
Burns, Stephen H. Finite-amplitude distortion in air at high acoustic pressures. **38**: 927(A)—1965
Burns, W. (see Taylor, W.). **38**: 113—1965

C

Campanella, S. J. Investigation of the time autocorrelation of sonic pulses propagated in a medium of random temperature microstructure. **38**: 942(A)—1965
—— **and D. C. Coulter.** Low-binary-data-rate operation of the formant vocoder. **38**: 942(A)—1965
Canahl, Julius A., Jr., and Arnold M. Small, Jr. Masking-level differences as a function of masker level. **38**: 928(A)—1965
—— (see Small, Arnold M., Jr.). **38**: 928(A)—1965
Carbonell, Jaime R. (see Ungar, Eric E.). **38**: 925(A)—1965
Carey, C. A. (see Carnevale, E. H.). **38**: 916(A)—1965
Carlisle, R. W. (see Sebesta, G. J.). **38**: 933(A), 937(A)—1965
Carlson, Harry W., Robert J. Mack, and Odell A. Morris. Sonic-boom pressure-field estimation techniques. **38**: 910(A)—1965
Carnevale, E. H., C. A. Carey, and S. J. Wolnik. Ultrasonic temperature determinations in a shock tube. **38**: 916(A)—1965
——, **L. C. Lynnworth, and G. S. Larson.** Ultrasonic determination of viscosity and rotational collision number of high temperature. **38**: 916(A)—1965
Carterette, Edward C., Morton P. Friedman, and Robert Cosmides. Reaction-time distributions in the detection of weak signals in noise. **38**: 531—1965
Caskey, William E. (see Elfner, Lloyd). **38**: 543—1965
Cassel, Lawrence E. and D. L. Phyfe. Hybrid encoding scheme for vocoders. **38**: 940(A)—1965
Chapman, R. P. and H. D. Scott. Cavitation caused by explosive shock pulses reflected from the sea surface. **38**: 933(A)—1965
Charan, K. K., J. R. Cox, Jr., and Arthur F. Niemoeller. Evaluation of new couplers for circumaural earphones. **38**: 945—1965
Christian, Ermine A. and Maurice Blaik. Near-surface measurements of deep explosions. II. Energy spectra of small charges. **38**: 57—1965
—— (see Blaik, Maurice). **38**: 50—1965
Citron, S. J. (see Bogdanoff, J. L.). **38**: 447—1965
Clark, J. G., R. Dann, and R. Yarnall. Stability of CW acoustic signals, Straits of Florida. **38**: 919(A)—1965
Cohen, Donald S. and George H. Handelman. Scattering of a plane acoustical wave by a spherical obstacle. **38**: 827—1965
Cohen, Marion F. and William D. Voiers. Effects of multiple vocoderization on consonant intelligibility. **38**: 941(A)—1965
Coker, Cecil H. Real-time formant vocoder, using a filter bank, a general-purpose digital computer, and an analog synthesizer. **38**: 940(A)—1965
—— **and P. Cummiskey.** On line computer control of a formant synthesizer. **38**: 940(A)—1965
Colburn, H. S. and N. I. Durlach. Time-intensity relations in binaural unmasking. **38**: 93—1965
Cole, B. F. Marine sediment attenuation and ocean-bottom-reflected sound. **38**: 291—1965
Cook, Bill D. Optical studies of nonlinear interactions. **38**: 927(A)—1965
Cook, Richard K. (see Smith, E. L.). **38**: 922(A)—1965
Cooper, Henry F., Jr., and Edward L. Reiss. Propagation and reflection of viscoelastic waves. **38**: 24—1965
Copeland, W. L. (see Crigler, J. L.). **38**: 920(A)—1965
Coppens, A. B. Propagation of transients in waveguides. **38**: 931(A)—1965
——, **Robert T. Beyer, M. B. Seiden, James Donohue, Frans Guepin, Richard H. Hodson, and Charles Townsend.** Parameter of nonlinearity in fluids. II. **38**: 797—1965
Corliss, Edith L. R., E. D. Burnett, and J. T. Priestley. Development of tests for evaluating the performance of hearing aids. **38**: 922(A)—1965
—— **and George E. Winzer.** Study of methods for estimating loudness. **38**: 424—1965
Cosmides, Robert (see Carterette, Edward C.). **38**: 531—1965
Coulter, D. C. (see Campanella, S. J.). **38**: 942(A)—1965
Cox, J. R., Jr. (see Charan, K. K.). **38**: 945—1965
Cramer, William S. Review of *Underwater Acoustics Handbook II* by Vernon M. Albers. **38**: 1073—1965
Crigler, J. L. and W. L. Copeland. Experimental noise studies of inlet guide vane–rotor–stator interactions for a single-stage axial-flow compressor. **38**: 920(A)—1965
Crocker, Malcolm J. Multimode response of panels to sonic boom. **38**: 936(A)—1965
Cron, Benjamin F. and Charles H. Sherman. Addendum: Spatial-correlation functions for various noise models [J. Acoust. Soc. Am. **34**, 1732–1736 (1962)]. **38**: 885(L)—1965
Crystal, Thomas H. Model of larynx activity during phonation. **38**: 934(A)—1965
Cummiskey, P. (see Coker, Cecil H.). **38**: 940(A)—1965
Curtis, Allen J. and Henry T. Abstein. Random-vibration testing with multiple exciters and control transducers. **38**: 925(A)—1965

D

Dahlke, H. E., D. A. Robinson, and John J. Van Houten. Shock-tube techniques for pressure calibration of microphones. **38**: 937(A)—1965
Daly, Robert L. (see Pickett, J. M.). **38**: 923(A)—1965
Dammann, James E. Application of adaptive threshold elements to the recognition of acoustic-phonetic states. **38**: 213—1965
Dann, R. (see Clark, J. G.). **38**: 919(A)—1965
D'Antonio, R. A. and R. F. Hill. Distortion of underwater acoustic signals reflected from a time and space random surface. **38**: 701—1965
Davis, Hallowell and Allan C. Goodman. Subtractive hearing loss, loudness recruitment, and decruitment. **38**: 922(A)—1965
—— (see Webster, J. C.). **38**: 668(L)—1965
Deatherage, Bruce H. Review of *Sensory Communication* edited by Walter A. Rosenblith. **38**: 496—1965
——, **Donald Henderson, Ervin R. Hafter, and Terrence R. Dolan.** Psychophysical investigation of auditory sensitization. **38**: 938(A)—1965
—— (see Dolan, Terrence R.). **38**: 928(A)—1965
Dehority, G. (see Slates, R.). **38**: 921(A)—1965

Dendrinos, Steve, Jr., and Robert E. Peskar. Utilization of the Saturn S-1C booster as an acoustic source. **38**: 920(A)—1965
Denes, P. B. "On-line" computing in speech research. **38**: 934(A)—1965
Denham, R. N. (see Kibblewhite, A. C.). **38**: 63, 629—1965
DeSilva, C. N. and G. E. Tersteeg. Response to "Comments on 'Axisymmetric vibrations of thin elastic shells'" [W. C. L. Hu, J. Acoust. Soc. Am. **38**, 365-366(L) 1965)]. **38**: 367(L)—1965
Dixon, N. R., H. D. Maxey, and R. Alysworth. Some effects of list familiarity and synthetic segment familiarity on the intelligibility of PB words produced by diphone synthesis. **38**: 941(A)—1965
Dolan, Terrence R., Bruce H. Deatherage, and Ervin R. Hafter. Masking-level differences for monaural signals binaurally masked. **38**: 928(A)—1965
—— (see Deatherage, Bruce H.). **38**: 938(A)—1965
Donohue, James (see Coppens, A. B.). **38**: 797—1965
Doolittle, R. D. (see Überall, H.). **38**: 933(A)—1965
Dosanjh, Darshan S. (see Sheeran, William J.). **38**: 482(L)—1965
Dostie, G. (see Tufts, D.). **38**: 362(L)—1965
Doty, K. L. Digital spectral analysis of audio signals. **38**: 911(A)—1965
Dunn, Floyd (see Hawley, S. A.). **38**: 521, errata 1064(L)—1965
Durlach, N. I. (see Colburn, H. S.). **38**: 93—1965

E

Egan, James P. Masking-level differences as a function of interaural disparities in intensity of signal and of noise. **38**: 1043—1965
Elbaum, C. Harmonic generation in solids effect of dislocations. **38**: 926(A)—1965
Elder, S. A. Theory of flue-pipe sound generation. **38**: 913(A)—1965
Eldred, Kenneth McK. High-intensity air-modulator noise source. **38**: 941(A)—1965
Eldredge, Donald H. Tonal interference in cochlear microphonics. **38**: 917(A)—1965
Elfner, Lloyd and William E. Caskey. Continuity effects with alternately sounded noise and tone signals as a function of manner of presentation. **38**: 543—1965
Elliott, D. N. (see Flynn, William E.). **38**: 104—1965
Elliott, Lois L. Backward masking of short tones by narrow- and wide-band noise bursts. **38**: 928(A)—1965
—— Changes in the simultaneous masked threshold of brief tones. **38**: 738—1965

F

Fahle, William A. (see Mundie, J. Ryland). **38**: 934(A)—1965
Fand, R. M. Acoustic water tunnel. **38**: 561—1965
—— Comments on "Influence of sound upon local heat transfer from a cylinder" [P. D. Richardson, J. Acoust. Soc. Am. **36**, 2323–2327 (1964)]. **38**: 370(L)—1965
—— **and J. Kaye.** Erratum: Acoustic streaming near a heated cylinder [J. Acoust. Soc. Am. **32**, 579–584 (1960)]. **38**: 885(L)—1965
Ferris, Horace G. Computation of farfield radiation patterns by use of a general integral solution to the time-dependent scalar wave equation. **38**: 933(A)—1965
Fiala, Walter T., J. K. Hilliard, J. A. Renkus, and John J. Van Houten. Electropneumatic acoustic generator. **38**: 956—1965
Fischer, Robert E., Editor. *Environmental Control* reviewed by T. D. Northwood. **38**: 158—1965
Fisher, F. H. Ultrasonic absorption in $MgSO_4$ solutions as a function of pressure and dielectric constant. **38**: 805—1965
Flanagan, J. L., D. I. S. Meinhart, Roger M. Golden, and Man Mohan Sondhi. Phase vocoder. **38**: 939(A)—1965
—— **and B. J. Watson.** Binaural unmasking of periodic pulses: effects of interaural time and spectral content. **38**: 929(A)—1965
Flowers, Kenneth D. and Burton G. Hurdle. Monostatic scattering from the ocean volume. **38**: 932(A)—1965
—— (see Thompson, K. P.). **38**: 932(A)—1965
Flynn, William E. and D. N. Elliott. Rôle of the pinna in hearing. **38**: 104—1965
Ford, Joseph and Victor K. Paré. Behavior of finite-amplitude sound waves in nonlinear solids. **38**: 926(A)—1965
Foss, Willard F., Jr. (see Baals, Donald D.). **38**: 914(A)—1965
Fox, H. L. (see Maidanik, Gideon). **37**: 477(L)—1965
Fox, Richard L. Synthesis of simple shock isolator. **38**: 914(A)—1965
Fraser, D. B. Acoustic properties of solids by the resonant-sphere technique. **38**: 930(A)—1965
Freedman, M. David. Technique for the analysis of musical-instrument tones. **38**: 912(A)—1965
Fricke, James E. Monaural phase effects in auditory signal detection. **38**: 939(A)—1965
—— (see Singh, Sadanand). **38**: 923(A)—1965
Friedman, Morton P. (see Carterette, Edward C.). **38**: 531—1965
Fry, M. N. (see Hillix, W. A.). **38**: 790—1965
Frydman, J. Automation of sound transfer from a tape recorder to the Sonagraph. **38**: 143(L)—1965
Furrer, Willi. *Room and Building Acoustics and Noise Abatement* reviewed by Robert H. Tanner. **38**: 385—1965

G

Gammell, Paul M. and Richard V. Waterhouse. Probability density of a frequency-modulated sound signal in a reverberant enclosure. **38**: 937(A)—1965
Ganton, J. H. and A. R. Milne. Temperature- and wind-dependent ambient noise under midwinter pack ice. **38**: 406—1965
Gardner, Mark B. Talking levels for a number of assigned communication tasks. **38**: 921(A)—1965
Gaston, Audley D., Jr. (see Jeffress, Lloyd A.). **38**: 928(A), 929(A)—1965
Gauster, W. B. and M. A. Breazeale. Absolute-amplitude measurements of distorted ultrasonic waves in solids. **38**: 927(A)—1965
Germano, J. F., R. Halley, and W. B. Allen. Real-time electronic spectrograph for analysis of acoustic transients. **38**: 1031—1965
Gibson, J. S. Boundary-layer-noise measurements on a large turbofan aircraft. **38**: 921(A)—1965
Gilchrist, Richard B. and Wayne A. Strawderman. Experimental hydrophone-size correction factor for boundary-layer pressure fluctuations. **38**: 298—1965
Glantz, J. (see Zwislocki, Jozef J.). **38**: 938(A)—1965
Gold, Bernard. Techniques for speech bandwidth compression, using combinations of channel vocoders and formant vocoders. **38**: 2—1965
Golden, Roger M. (see Flanagan, J. L.). **38**: 939(A)—1965
Gomperts, M. C. Comments on "Approximation to the diffraction of sound by a circular aperture in a rigid wall of finite thickness" [G. P. Wilson and W. W. Soroka, J. Acoust. Soc. Am. **37**, 286–297 (1965)]. **38**: 877(L)—1965

Goodhill, Victor (see Wilber, Laura Ann). **38**: 922(A)—1965
Goodman, Allan C. (see Davis, Hallowell). **38**: 922(A)—1965
Granato, A. V. (see Swartz, Karl D.). **38**: 824—1965
Grande, E. Refraction of injected sound by a very cold nitrogen jet. **38**: 1063(L)—1965
Graves, T. A. (see Mayall, Miles). **38**: 919(A)—1965
Greenspan, Martin. Review of *Fundamentals of Ultrasonics* by J. Blitz. **38**: 158—1965
Groginsky, Herbert L. (see Middleton, David). **38**: 727—1965
Guepin, Frans (see Coppens, A. B.). **38**: 797—1965
Guthrie, Albert N. and John D. Shaffer. Propagation of low-frequency CW sound signals in the deep ocean. **38**: 1060(L)—1965

H

Hafter, Ervin R. (see Deatherage, Bruce H.). **38**: 938(A)—1965
—— (see Dolan, Terrence R.). **38**: 928(A)—1965
Hagelberg, M. Paul and Gerald Holton. Calculation of B/A for water from velocity vs. pressure and temperature measurements. **38**: 927(A)—1965
Halley, R. (see Germano, J. F.). **38**: 1031—1965
Hamilton, G. R. and Brian Patterson. Spectra of large underwater explosions. **38**: 941(A)—1965
Hance, Harold V. and J. K. Parks. Wide-band modulation of a laser beam, using Bragg-angle diffraction by amplitude-modulated ultrasonic waves. **38**: 14—1965
Handelman, George H. (see Cohen, Donald S.). **38**: 827—1965
Hanes, G. R., R. Turner, and J. E. Piercy. Hypersonic absorption and velocity from measurement of light scattering: dichloromethane. **38**: 1057(L)—1965
Hanne, John R. (see Peterson, Gordon E.). **38**: 224—1965
Hansen, Sven (see Peterson, John L.). **38**: 918(A)—1965
Hanson, C. E. (see Plunkett, Robert). **38**: 924(A)—1965
Harbert, F. and I. M. Young. Amplitude of Békésy tracings with different attenuation rates. **38**: 923(A)—1965
Harris, Cyril M., President. 69th Meeting, 1965, Washington. **38**: 373(AN)—1965
Harrison, Mark. Generalized scattering theory for one, two, and three dimensions. **38**: 932(A)—1965
Hartog, J. J. (see Knollman, G. C.). **38**: 72—1965
Hastrup, O. F. Reflection of explosive pulses from a general layered sea floor. **38**: 933(A)—1965
Hawley, S. A., L. W. Kessler, and Floyd Dunn. Ultrasonic absorption in aqueous solutions of high-molecular-weight polysaccharides. **38**: 521, errata 1064(L)—1965
Hayre, H. S. and D. E. Kaufman. Plane-wave scattering from a rough surface with correlated large- and small-scale orders of roughness. **38**: 599—1965
Heaps, H. S. (see Russell, L. T.). **38**: 47—1965
Hehmann, H. W. and T. Mariner. Behavior of three floors for different types of impact. **38**: 936(A)—1965
—— (see Mariner, T.). **38**: 936(A)—1965
Hemdal, John F. Application of digital inverse filtering to the systematic variation of vowel parameters. **38**: 935(A)—1965
Henderson, Donald (see Deatherage, Bruce H.). **38**: 938(A)—1965
Henning, G. Bruce. Binaural masking-level difference and frequency discrimination. **38**: 929(A)—1965
Hershman, R. L. (see Hillix, W. A.). **38**: 790—1965
Hickman, Aubrey T. Generation and synthesis of tone complexes. **38**: 472(L)—1965
Hiedemann, E. A. (see Klein, W. R.). **38**: 229—1965
Higgins, T. H. Sonic-boom research and design considerations in the development of a commercial supersonic transport (SST). **38**: 914(A)—1965
Hill, R. F. (see D'Antonio, R. A.). **38**: 701—1965
Hilliard, J. K. (see Fiala, Walter T.). **38**: 956—1965
Hillix, W. A., M. N. Fry, and R. L. Hershman. Computer recognition of spoken digits based on six nonacoustic measures. **38**: 790—1965
Hilton, David A. and James W. Newman, Jr. Instrumentation and techniques for measurement of sonic-boom signatures. **38**: 910(A)—1965
Hirsch, Peter. Acoustic field of a pulsed source in the underwater sound channel. **38**: 1018—1965
—— Pulse distortion in the underwater sound channel. **38**: 919(A)—1965
Hirschwehr, Edmund (see Urbanek, Günther E.). **38**: 920(A)—1965
Hirsh, Ira J. The Gold Medal, 1965, Hallowell Davis. **38**: 374—1965
—— (see Weston, Peter B.). **38**: 1053—1965
Hodge, David C. and R. Bruce McCommons. Relation between hearing level and TTS from impulse-noise exposure. **38**: 938(A)—1965
Hodgson, David A. Control-display time-lag effects with tracking to auditory and visual displays. **38**: 937(A)—1965
Hodson, Richard H. (see Coppens, A. B.). **38**: 797—1965
Holton, Gerald (see Hagelberg, M. Paul). **38**: 927(A)—1965
Hopkins, I. L. Comments on Fitzgerald resonances. **38**: 145(L)—1965
Hu, William C. L. Comments on "Axisymmetric vibrations of thin elastic shells" [C. N. DeSilva and G. E. Tersteeg, J. Acoust. Soc. Am. **36**, 666-672 (1964)]. **38**: 365(L)—1965
Hubbard, Harvey H. Nature of the sonic-boom problem. **38**: 910(A)—1965
Huggins, Donald N. Test procedure for evaluating impact transmission through structures. **38**: 936(A)—1965
Hunt, F. V. *Sic transit sonitus.* **38**: 911(A)—1965
Hunter, Joseph L. Review of *Physical Acoustics. Principles and Methods. Volume 2, Part A. Properties of Gases, Liquids, and Solutions* edited by Warren P. Mason. **38**: 890—1965
Hurdle, Burton G. (see Flowers, Kenneth D.). **38**: 932(A)—1965
—— (see Thompson, K. P.). **38**: 932(A)—1965

I

Irwin, James Wesley, William H. Perkins, and Naoaki Yanagihara. Certain acoustic correlates of vocal style. **38**: 934(A)—1965

J

Jacobson, M. J. (see Liggett, W. S., Jr.). **38**: 303—1965
Jahanshahi, A. Equations of motion of spherical shells. **38**: 883(L)—1965
Jain, R. K. (see Prasad, C.). **38**: 1006—1965
Janssen, Raymond A. and Talivaldis I. Smits. Response of a linear system to impulsive-noise forcing. **38**: 925(A)—1965
Jeffress, Lloyd A. and Audley D. Gaston, Jr. ROC curves from an ear model. **38**: 928(A)—1965
—— **and Audley D. Gaston, Jr.** Statistics of interaural time differences under antiphasic stimulus conditions. **38**: 929(A)—1965
—— (see Rilling, Mark E.). **38**: 202—1965
Jewell, R. E. (see Rentzepis, G. M.). **38**: 941(A)—1965
Johnson, L. E. and Arthur F. Niemoeller. Soil compliance as a function of moisture and dry density. **38**: 882(L)—1965

Junger, M. C. and William Thompson, Jr. Fresnel-zone and plane-wave impedances on very large pistons. **38**: 1059(L)—1965

—— **and William Thompson, Jr.** Oscillatory acoustic transients radiated by impulsively accelerated bodies. **38**: 978—1965

K

Kaizen, M. D. and W. R. Turner. Acoustic implications of persistent microbubble model. **38**: 916(A)—1965

Kalnins, A. (see Kraus, H.). **38**: 994—1965

Kane, E. J. Some effects of the nonuniform atmosphere on the propagation of sonic booms. **38**: 910(A)—1965

Karplus, Henry B. Some consequences of a hypothesis concerning neuron logic in the ear. **38**: 916(A)—1965

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Strawderman, Wayne A. (see Gilchrist, Richard B.). **38**: 298—1965
Strominger, Norman L. and Philip C. Nieder. Effects of transecting the brachium of the inferior colliculus upon auditory cortex potentials elicited by clicks. **38**: 917(A)—1965
Strong, William J. (see Michaels, Sheldon B.). **38**: 935(A)—1965
Suchman, Daniel F. Minor-lobe level as a function of tolerance on variations in individual-element sensitivity in four-element line arrays. **38**: 723—1965
Swartz, Karl D. and A. V. Granato. Experimental test of the Laval–Raman–Viswanathan theory of elasticity. **38**: 824—1965

T

Tack, D. H. and R. F. Lambert. Influence of shear flow on sound attenuation in a lined duct. **38**: 655—1965
Tanner, Robert H. Review of *Room and Building Acoustics and Noise Abatement* by Willi Furrer. **38**: 385—1965
Tanttila, W. H. (see Mahler, R. J.). **38**: 429—1965
Taylor, W., J. Pearson, A. Mair, and W. Burns. Study of noise and hearing in jute weaving. **38**: 113—1965
Teas, Donald C. Time histograms of cochlear-microphonic response to low-pass noise. **38**: 917(A)—1965
Tedrick, Richard N. Effects of combustion instability on rocket-engine-noise sources and levels. **38**: 921(A)—1965
Tenney, James (see Mathews, M. V.). **38**: 912(A)—1965
Tersteeg, G. E. (see DeSilva, C. N.). **38**: 367(L)—1965
Thompson, K. P., Kenneth D. Flowers, and Burton G. Hurdle. Scattered fields from the ocean bottom. **38**: 932(A)—1965
Thompson, William, Jr. (see Junger, M. C.). **38**: 978, 1059(L)—1965
Thorp, William H. Deep-ocean sound attenuation in the sub- and low-kilocycle-per-second region. **38**: 648—1965
Thurber, James K. (see Sirovich, Lawrence). **38**: 478(L)—1965
Thurston, G. B. Measurement of propagation constants for shear waves in dilute macromolecular solutions. **38**: 916(A)—1965
Thurston, R. N. Determination of nonlinear properties from the velocity of small-amplitude waves in statically stressed crystals. **38**: 926(A)—1965
Tipnis, C. B. (see Klein, W. R.). **38**: 229—1965
Tobias, Jerry V. (see Rowland, Roy C.). **38**: 938(A)—1965
Tomlinson, Raymond S. SPASS—an improved terminal-analog speech synthesizer. **38**: 940(A)—1965
Toole, F. E. and B. McA. Sayers. Inferences of neural activity associated with binaural acoustic images. **38**: 769—1965
Torvik, Peter J. and Robert Plunkett. Negative group velocities in semiinfinite plates. **38**: 924(A)—1965
Townsend, Charles (see Coppens, A. B.). **38**: 797—1965
Tufts, D., D. Mayhew, G. Dostie, and A. Smith. Some results in automatic speech segmentation using wide-band filtering and subtraction. **38**: 362(L)—1965
Turner, R. (see Hanes, G. R.). **38**: 1057(L)—1965
Turner, W. R. (see Kaizen, M. D.). **38**: 916(A)—1965
Twersky, Victor (see Burke, James E.). **38**: 589—1965

U

Überall, H., R. D. Doolittle, and J. V. McNicholas. Pulsed creeping waves in acoustics. **38**: 933(A)—1965
Ungar, Eric E. and Jaime R. Carbonell. Mechanism of vibratory-energy dissipation at joints in thin metal structures. **38**: 925(A)—1965
Urbanek, Günther E. and Edmund Hirschwehr. Importance of noise-spectrum measurements for noise control in railway vehicles. **38**: 920(A)—1965
—— (see Rothauser, E. H.). **38**: 940(A)—1965
Urick, R. J. Caustics and convergence zones in deep-water sound transmission. **38**: 348—1965
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V

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Van Buren, A. L. and M. A. Breazeale. Distorted-wave interaction at boundaries. **38**: 931(A)—1965
Van Houten, John J. (see Dahlke, H. E.). **38**: 937(A)—1965
—— (see Fiala, Walter T.). **38**: 956—1965
Vent, R. J. (see Batzler, W. E.). **38**: 932(A)—1965
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—— (see Cohen, Marion F.). **38**: 941(A)—1965
von Gierke, Henning E. Effects of sonic boom on people: review and outlook. **38**: 913(A)—1965
—— Review of *Physik und Technik der Lärmbekämpfung* by G. Kurtze. **38**: 1072—1965

W

Ward, Thomas L. Acoustic bridge for the measurement of liquid quantity. **38**: 1056(L)—1965
Ward, W. Dixon. Temporary threshold shifts following monaural and binaural exposure. **38**: 121—1965
—— (see Webster, J. C.). **38**: 668(L)—1965
Warren, C. H. E. Experience in the United Kingdom on the effects of sonic bangs. **38**: 914(A)—1965
Waterfall, Wallace, Secretary. Members of Administrative and Technical Committees of the Acoustical Society of America. **38**: 490—1965
—— 70th Meeting of the Acoustical Society of America. **38**: 376(AN)—1965
Waterhouse, Richard V. (see Gammell, Paul M.). **38**: 937(A)—1965
Watson, B. J. (see Flanagan, J. L.). **38**: 929(A)—1965
Watson, Charles S. and Walter T. Bourbon. Rating scales and two-state threshold models. **38**: 667(L)—1965
—— **and Laura R. Love.** Distributions of silent periods in speech: stutterers versus nonstutterers. **38**: 935(A)—1965
Webster, J. (see Lowy, K.). **38**: 917(A)—1965
Webster, J. C., Hallowell Davis, and W. Dixon Ward. Everyday-speech intelligibility. **38**: 668(L)—1965
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Weinroth, Donald M. Response of buildings to sonic booms. **38**: 914(A)—1965
Weissler, P. G. (see Smith, E. L.). **38**: 922(A)—1965

Wells, R. J. and J. M. McGrew. Model freon compressor for acoustic investigations. **38**: 920(A)—1965
Weston, D. E. Acoustic interaction effects in arrays of small spheres. **38**: 933(A)—1965
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Weston, Peter B., James D. Miller, and Ira J. Hirsh. Release from masking for speech. **38**: 1053—1965
Wetherill, Ewart A. Reduction of plumbing noise in a multistory building. **38**: 936(A)—1965
White, Frederick E. Review of *Sound Waves and Light Waves* by Winston E. Kock. **38**: 384—1965
—— **and Earl D. Schubert.** References to contemporary papers on acoustics. **38**: 159, 497, 891—1965
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Whitfield, I. C. and H. F. Ross. Cochlear-microphonic and summating potentials and the outputs of individual hair-cell generators. **38**: 126—1965
Whitmarsh, David C. and William J. Leiss. Underwater-acoustic-propagation measurements to 5000-foot depths. **38**: 919(A)—1965
Whitmore, John K. and W. A. Wilbanks. Interaural noise correlation and detection of low-frequency monaural signals. **38**: 929(A)—1965
—— (see Wilbanks, W. A.). **38**: 929(A)—1965
Wickelgren, Wayne A. Distinctive features and errors in short-term memory for English vowels. **38**: 583—1965
Wilbanks, W. A. and John K. Whitmore. Detection of a narrow-band noise as a function of its interaural correlation. **38**: 929(A)—1965
—— (see Whitmore, John K.). **38**: 929(A)—1965
Wilber, Laura Ann and Victor Goodhill. Variability in bone-conduction thresholds. **38**: 922(A)—1965
Wilkinson, J. P. Natural frequencies of closed spherical shells. **38**: 367(L)—1965
Wilms, E. V. and M. Stippes. Deflection of a particle moving along an infinite string resting on an elastic foundation. **38**: 282—1965
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Winograd, Eugene (see Sidley, Norman A.). **38**: 11, 1050—1965
Winzer, George E. (see Corliss, Edith L. R.). **38**: 424—1965
Wisotsky, Serge. Underwater steam sound source. **38**: 934(A)—1965
Wittig, L. E. (see Plunkett, Robert). **38**: 924(A)—1965
Wolnik, S. J. (see Carnevale, E. H.). **38**: 916(A)—1965

Y

Yanagihara, Naoaki (see Irwin, James Wesley). **38**: 934(A)—1965
Yarnall, R. (see Clark, J. G.). **38**: 919(A)—1965
Young, I. M. (see Harbert, F.). **38**: 923(A)—1965
Young, Robert W. Review of acoustical patents. **38**: 176, 386, 515, 689, 903, 1074—1965
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Younglove, B. A. Speed of sound in fluid parahydrogen. **38**: 433—1965

Z

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Zwicker, Eberhard. Temporal effects in simultaneous masking and loudness. **38**: 132—1965
Zwislocki, Jozef J., E. Buining, and J. Glantz. Three time parameters of central masking. **38**: 938(A)—1965
—— (see Kletsky, Earl J.). **38**: 916(A)—1965

Inventor Index to Acoustical Patents, Volume 38

Following the inventor's name is the number of the United States patent.

A

Abrams, Bernard W. 3,164,659. Acoustic system. **38**: 391—1965

Aileo, Jackson A. 3,178,723. Sound attenuating device and supporting means in a helmet. **38**: 690—1965

Albright, James E. (see Grundmann, Gustave L.). **38**: 386—1965

Amato, Frank M. 3,162,975. Bird simulating whirling sounding toy. **38**: 176—1965

Anderson, Earl F. 3,185,011. Stringed musical instrument. **38**: 906—1965

Anderson, Lloyd D. 3,181,138. Electrical sound simulator. **38**: 1079—1965

Anderson, Victor C. 3,004,819. Electrostatic recorder. **38**: 389—1965

Arnoldi, Robert A. 3,177,466. Artificial sound channel. **38**: 697—1965

B

Bacon, John P. 3,028,752. Ultrasonic testing apparatus. **38**: 391—1965

Baderak, Seymour. 3,188,901. Violin teaching aid. **38**: 907—1965

Bailey, Phillip L. (see Clary, Harry E.). **38**: 1077—1965

Balise, Peter L., Jr. 3,161,255. Underwater platform. **38**: 182—1965

Ball, William B., Jr. 3,104,731. Acoustical ceiling. **38**: 904—1965

Banning, Thomas A., Jr., and Emil L. Ranseen. 3,164,685. Wide band recording system. **38**: 178—1965

Barry, Leonard Dodge. 3,172,961. Reproducing circuit for magnetic recorder. **38**: 179—1965

Baum, Jerome N. and Samuel J. Campanella. 3,171,406. Heart beat frequency analyzer. **38**: 699—1965

Baumeister, Heard K. and Vladimir Nejezchleb. 3,170,045. Hydrodynamically air lubricated magnetic tape head. **38**: 179—1965

Bechmann, Rudolf H. 3,165,651. Piezoelectric crystal apparatus. **38**: 389—1965

Beguin, Albert E. 3,062,181. Apparatus for applying magnetic sound track. **38**: 178—1965

Belar, Herbert and Harry F. Olson. 3,172,954. Acoustic apparatus. **38**: 180—1965

Bender, Werner K. 3,185,776. Installation for reproducing sound from a stationary sound record area. **38**: 691—1965

Bennett, William O., William W. Mutter, and Egbert Van Haaften. 3,202,848. Tuning fork frequency adjuster. **38**: 1076—1965

Beumer, John, Jr. (see Wheeler, Robert N.). **38**: 179—1965

Bischoff, Gustav H. 3,172,232. Air-operated sounding toy. **38**: 690—1965

Boorman, Wetherby. 3,165,596. Phonograph monaural-binaural switching device. **36**: 516—1965

Boschi, Antonio and Giancarlo Pennati. 3,103,255. Sound-absorbing wall covering. **38**: 903—1965

Bosselaar, Hendrik. 3,177,381. Apparatus for ultrasonic wall thickness measurements. **38**: 695—1965

Brauer, Joseph B. 3,071,741. Microwave acoustic delay line. **38**: 695—1965

Brock, Joe F. 3,156,472. Magnetic tone arm suspension. **38**: 517—1965

Brooks, Melvin H. 3,167,871. Sound therapy device. **38**: 694—1965

Brophy, James J. (see Camras, Marvin). **38**: 388—1965

Brouneus, Harold A. 3,174,120. Ultrasonic delay line having means to reduce third-time echo. **38**: 516—1965

Brown, Alvin E. (see Suellentrop, Fred J.). **38**: 1078—1965

Burns, James Ormston and Gordon Spencer Chandler. 3,181,409. Bridges for stringed instruments such as for guitars. **38**: 693—1965

C

Campanella, Samuel J. (see Baum, Jerome N.). **38**: 699—1965

Camras, Marvin. 3,083,268. Interchangeable magnetic record tape and method of making same. **38**: 387—1965

—— **and James J. Brophy.** 3,114,009. Hall element magnetic transducer. **38**: 388—1965

Cardoza, Irving A. 3,175,448. Output control for accordions. **38**: 390—1965

Carmichael, George W. (see Tamura, Yoshiaki). **38**: 690—1965

Carrier, Robert M., Jr., and John M. Morris. 3,024,663. Tuned absorber for vibratory drive. **38**: 696—1965

Cavalieri, Albert L., Jr., and Robert W. Roop. 3,024,429. Electromechanical reed system. **38**: 177—1965

Cefaly, Ralph. 3,179,204. Acoustic stethoscope. **38**: 699—1965

Chambers, Herbert I., Albert W. Fischer, Kauno E. Sihvonen, and Gardner P. Wilson. 2,931,690. Oscillograph apparatus. **37**: 386—1965

Chandler, Gordon Spencer (see Burns, James Ormston). **38**: 693—1965

Chapman, John Earl. 3,142,725. Intercommunication system. **38**: 691—1965

Charnetsky, Harry, Jr., and William R. Maclay. 3,072,752. Apparatus for manifesting intelligence on record media. **38**: 178—1965

Clapper, Genung L. 3,146,309. Synthetic speech sound generator. **38**: 694—1965

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Clark, Chester A. 3,109,408. Internal rotary valve-fluid pressure transducer. **38**: 909—1965

—— 3,182,745. Free piston fluid pressure transducer. **38**: 909—1965

Clark, Winslow B. M. and Wallace R. Spark. 3,182,129. Electronic stethoscope. **38**: 699—1965

Clary, Harry E. and Phillip L. Bailey. 3,168,162. Noise filter. **38**: 1077—1965

Clay, Clarence S., Jr. 3,158,830. Signal correlation method and means. **38**: 519—1965

—— (see Schimmel, Howard). **38**: 519—1965

Cook, Edward G. and William I. Shepley. 3,021,706. Ultrasonic materials testing system. **38**: 181—1965

Cookerly, Jack C. and George R. Hall. 3,174,380. Stringed instrument bridge and anchoring means. **38**: 518—1965

Coplen, Delois R. (see Laughlin, James L.). **38**: 518—1965

Cox, William H. 3,061,832. Magnetic recording apparatus. **38**: 178—1965

Coyle, Forrest E. 3,166,619. Method for making a transducer. **38**: 392—1965
—— **and Frank P. Hodges.** 3,185,868. Acoustic absorber pad. **38**: 905—1965
Criscuolo, Andrew C. 3,175,450. Drumstick. **38**: 692—1965
Cunningham, James (see Jordan, Robert Oakes). **38**: 387—1965
Curtis, Roger C. (see Jones, Lloyd R.). **38**: 179—1965

D

Darby, Ronald A., Frank P. Hodges, and William L. Letsch. 3,167,150. Radiation level indicator for sonar projectors. **38**: 519—1965
Davidson, Gareth M. and Jack Kritz. 3,164,987. Electrostatic vibration transducer. **38**: 117—1965
De La Ronde, Roy E. J. and Garnet O. De Lucia. 3,169,437. Guitar attachment. **38**: 390—1965
De Lucia, Garnet O. (see De La Ronde, Roy E. J.). **37**: 390—1965
Dickey, Clyde W. and Otto K. Harling. 3,173,034. Ultrasonic device. **38**: 695—1965
Druz, Walter S. 3,189,841. Hearing aid automatic gain control system. **38**: 1074—1965
Dudley, John W. 3,160,850. Underwater locating apparatus. **38**: 182—1965
Dufresne, Robert J. (see Karpovich, John). **38**: 904—1965
Dulin, Gerald F. 3,138,778. Electronic acoustic receiver. **38**: 698—1965
Dunlop, James. 3,185,012. Capo tasto. **38**: 906—1965
Duthion, Louis and Michel S. D. Hafenscher. 3,174,582. In flight jet silencer. **38**: 1077—1965

E

Ellingson, Herman E. and John C. Munson. 3,182,283. Method of measuring the velocity of an underwater moving sound source. **38**: 1079—1965
Ensley, Donald Luther. 3,164,022. Acoustically supported motion sensor and method. **38**: 391—1965
Evans, Chauncey Richard. 3,178,501. Controls for electrical string instruments. **38**: 693—1965

F

Farrar, Walter and Jack L. Leonard. 3,187,098. Foetal heart-beat detector. **38**: 699—1965
Fender, Clarence L. 3,177,283. Electric guitar incorporating separate pickups for the wound and unwound strings. **38**: 693—1965
Finch, Gerald H. 3,186,288. Stringed instrument of the viol type. **38**: 906—1965
Fischer, Albert W. (see Chambers, Herbert I.). **38**: 386—1965
Fisher, George F. 3,173,035. Miniaturized piezoelectric crystal device. **38**: 691—1965
Flygstad, Dean W. 3,187,833. Transducer mounting. **38**: 905—1965
Fontaine, Robert R. 3,164,787. Sonobuoy simulator. **38**: 391—1965
Frank, Karl F. 3,017,768. Vibration pickup means. **38**: 697—1965
Freeman, Quilla H. Re. 25,728. Stringed musical instrument. **38**: 390—1965
French, Harry A. 3,169,523. Ear protector. **38**: 515—1965
Fujimoto, Yoshimasa (see Yasuda, Takushi). **37**: 389—1965

G

Gates, Myron W., Jr. 3,162,081. Apparatus and method for splicing tape having means for locating magnetic particles on the tape. **38**: 178—1965
Georgantas, Panos D. (see Tamura, Yoshiaki). **38**: 690—1965
Gildard, James H. and Richard D. Lemmerman. 3,103,987. Acoustical panel construction. **38**: 907—1965
Gildard, James H., III, and Richard D. Lemmerman. 3,115,948. Panel for the reduction of sound transmission. **38**: 904—1965
Glass, Marvin I. and Arthur E. Neumann. 3,165,860. Sounding wheeled toy. **38**: 390—1965
Goerlich, Reinhard (see Herrmann, Günter). **38**: 388—1965
Goetz-Gabor, Charles (see Low, Kenneth B., Jr.). **38**: 692—1965
Goldberg, Abraham A. 3,072,753. Apparatus for duplicating magnetic recordings. **38**: 387—1965
Goldberg, Arnold (see Gould, Ronald). **38**: 906—1965
Goldberger, Ernö Meir (see Menuhin, Yehudi). **38**: 693—1965
Gordon, Sumner and William F. Saars. 3,075,049. Repetitive scanning of a record track on a fragment of a record. **38**: 387—1965
Gordon, William F. 3,181,116. Underwater telephone system. **38**: 908—1965
Görike, Rudolph. 3,158,697. Two-system dynamic earphone. **38**: 179—1965
Gould, Ronald and Arnold Goldberg. 3,186,290. Percussion instrument practice. **38**: 906—1965
Green, Charles E. 3,177,382. Mosaic construction for electroacoustical cylindrical transducers. **38**: 698—1965
—— 3,182,284. Interleaved electroacoustical transducer. **38**: 1079—1965
Grieg, Donald D. 3,122,719. Distance measuring device. **38**: 697—1965
—— 3,178,678. Depth ahead adapter for sonar systems. **38**: 698—1965
Groak, Josef. 3,170,044. Manufacture of magnetic records. **38**: 178—1965
Grodzinsky, Samuel and Myron N. Kaufman. 3,165,734. Screw noise simulation technique. **38**: 391—1965
Grundmann, Gustave L. 3,028,830. Ultrasonic transmitter mechanism. **38**: 386—1965
—— **and James E. Albright.** 3,028,831. Mechanical resonator. **38**: 386—1965
Guest, Lawrence V. 3,085,759. Magnetic tape recorder and reproducer. **38**: 388—1965
Gugelot, Hans and Helmut A. Müller. 3,174,382. Percussion musical instrument. **38**: 517—1965
Gussak, William. 3,185,013. Musical drum. **38**: 906—1965

H

Haag, Franz. 3,194,341. Sound absorber with partitions forming meandering channels connected to resonance duct. **38**: 1078—1965
Hafenscher, Michel S. D. (see Duthion, Louis). **38**: 1077—1965
Hall, George R. (see Cookerly, Jack C.). **38**: 518—1965
Hamilton, William H. and Arthur Nelkin. 3,180,296. Continuous wave acoustic guidance system. **38**: 908—1965
Hardy, Maurice E. 3,164,331. Tape recorder. **38**: 178—1965
Harling, Otto K. (see Dickey, Clyde W.). **38**: 695—1965
Harman, H. W. 3,153,123. Resilient absorber on microphone stand. **38**: 697—1965
Haslett, Roy William George. 3,174,127. Echo sounding. **38**: 518—1965
Hay, John A. 3,162,265. Noise suppression device for turbojet engines. **38**: 1077—1965
Heim, Richard C. 3,173,037. Magnetostrictive-transducer apparatus. **38**: 692—1965
Herrmann, Günter and Reinhard Goerlich. 3,085,758. Sound recording and reproducing apparatus driving mechanism. **38**: 388—1965

Hirst, Archie John. 3,028,665. Method of making a resilient mounting. **38**: 696—1965
Hodges, Frank P. (see Coyle, Forrest E.). **38**: 905—1965
—— (see Darby, Ronald A.). **38**: 519—1965
Hoffman, Leonard M. (see Peshel, Robert L.). **38**: 389—1965
Hollander, L. E., Jr. 3,145,563. Piezoresistive transducer employing P-type lead telluride (PbTe) as the piezoresistive material. **38**: 691—1965
Honey, Charles C., Lawrence R. Toothman, and Kenneth C. Stewart. 3,102,246. Noise reducing means for transformer. **38**: 907—1965
Horsman, William W., William B. Huckabay, and William H. Parker. 3,178,681. Hydrophone. **38**: 699—1965
Howry, Douglass H. 3,023,611. Ultrasonic method and apparatus for investigating the interior structure of solid bodies. **38**: 181—1965
Huckabay, William B. (see Horsman, William W.). **38**: 699—1965
Huggins, Donald N. (see Rees, Willis M.). **38**: 904—1965

I

Irwin, Benjamin H. (see Ludlow, Edmund). **38**: 1077—1965

J

Jackson, Donald E. and George Rand. 3,178,680. Electronic signal storage and display system. **38**: 698—1965
Jenn, Louis J. and William E. Morrison. 3,110,357. Acoustic curb. **38**: 908—1965
Jeranson, Richard C. 3,178,985. Stringed musical instrument bridge. **38**: 693—1965
Jones, Lloyd R., Roger C. Curtis, and Marion P. Shorb. 3,171,902. Apparatus and method for controlling remotely-operated dictation equipment. **38**: 179—1965
Jordan, Robert Oakes and James Cunningham. 2,927,963. Single channel binaural or stereophonic sound system. **38**: 387—1965
Joy, Ivan L. 3,028,751. Means for ultrasonic inspection of rail. **38**: 181—1965
—— 3,028,753. Apparatus for wetting surfaces for ultrasonic testing. **38**: 181—1965

K

Karpovich, John and Robert J. Dufresne. 3,106,983. Foamed plastic sound absorbing material. **38**: 904—1965
Kato, Yoshiaki and Kazuo Tanaka. 3,192,702. Mechanical vibrator for time base. **38**: 1076—1965
—— (see Tanaka, Kazuo). **38**: 1076—1965
Kaufman, Myron N. (see Grodzinsky, Samuel). **38**: 391—1965
Kerley, James J., Jr. 3,023,993. Serially arranged vibration isolators with low natural frequency. **38**: 181—1965
—— 3,025,031. Vibration isolator arrangement to reduce stress concentration of cable. **38**: 181—1965
Kester, Ralph C., Jr. 3,186,289. Drum. **38**: 906—1965
Key, Carroll L., Jr., Donald T. Laird, and James M. Lawther. 3,160,848. Magnetostrictive transducer. **38**: 182—1965
Kling, William R. 3,169,162. Sonar simulator. **38**: 518—1965
Kohler, Helmut Karl. 3,193,048. Acoustic resonance chamber. **38**: 1075—1965
Konicki, Marion K. (see Stys, Harold R.). **38**: 390—1965
Kritz, Jack (see Davidson, Gareth M.). **38**: 177—1965
Kroenert, John T. 3,164,800. Underwater telephony. **38**: 391—1965
Kuskin, William. 3,156,788. Damped magnetic telephone receiver. **38**: 179—1965
Küsters, Willy (see Schoeps, Karl). **38**: 1075—1965

L

Laa, Friedrich (see Missriegler, Gerhard). **38**: 388—1965
Laird, Donald T. (see Key, Carroll L., Jr.). **38**: 182—1965
La Londe, Fred J. 3,167,995. Cymbal supports. **38**: 390—1965
Larkin, Wallace Keith. 3,184,556. Miniature headset-microphone adapted for use with a mask. **38**: 905—1965
Laughlin, James L. and Delois R. Coplen. 3,174,129. Underwater sound transmitter. **38**: 518—1965
Lawrence, Joseph L. (see Puharich, Henry K.). **38**: 689—1965
Lawther, James M. (see Key, Carroll L., Jr.). **38**: 182—1965
Lazzery, Angelo Gino. 3,028,832. Ultrasonic transmitter. **38**: 387—1965
Leale, Leslie P. 3,170,046. Hearing aid. **38**: 176—1965
Leblans, Leopold Michael Lambert Joseph (see van Lammeren, Johannes Antonius). **38**: 179—1965
Leistritz, Hans Karl. 3,196,978. Gas silencer having gas flow ducts defined by tubular rings within a casing. **38**: 1078—1965
Lemmerman, Richard D. (see Gildard, James H.). **38**: 907—1965
—— (see Gildard, James H., III). **38**: 904—1965
Leonard, Jack L. (see Farrar, Walter). **38**: 699—1965
Letsch, William L. (see Darby, Ronald A.). **38**: 519—1965
Levasseur, Zalka Alarie. 3,188,902. Instrument with triple-bout acoustical body. **38**: 907—1965
Levin, Franklyn K. 3,193,045. Fathometer. **38**: 1078—1965
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M

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N

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R

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Y

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Analytic Subject Index to Volume 38

Numerals in boldface indicate volume number. (T)'s designate title only.

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0.2 Conferences, Lectures, and Announcements, not of the Acoustical Society of America

A. B. Wood Memorial Fund. **38**: 494—1965

Acoustical Consultants elect officers. **38**: 1068—1965

Acoustics program established at The Pennsylvania State University. **38**: 486—1965

Advanced courses offered by Bolt Beranek and Newman. **38**: 887—1965

Austrian meeting on Noise Control in Residential Areas. **38**: 494—1965

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Bell Association to meet in Toronto. **38**: 681—1965

Beltone translations of *Experiments on Binaural Hearing in Noise*. **38**: 1068—1965

Calendar of meetings abroad. **38**: 157, 383, 495, 686, 889, 1071—1965

Center for Research on Language and Language Behavior. **38**: 489—1965

Central source of Government technical information for industry. **38**: 377—1965

Directory of acoustical scientists and laboratories in preparation. **38**: 383—1965

18th Annual Conference on Engineering in Medicine and Biology. **38**: 488—1965

Europiano Kongress 1965. **38**: 382—1965

Extension to AIRO Acoustics Laboratory. **38**: 156—1965

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Vth International Congress on Acoustics: proceedings. **38**: 685—1965

First Latin American Meeting on Acoustics: second report. **38**: 495—1965

First public performance of new instruments of the violin family. **38**: 380—1965

Fourth Czechoslovak Acoustical Conference; proceedings. **38**: 686—1965

Impact sound-transmission-loss data available. **38**: 152—1965

Industrial Noise Manual. **38**: 886—1965

International journal of scientific metrology. **38**: 489—1965

International Standards. **38**: 679—1965

Measurement engineering short course. **38**: 681—1965

Medical Ultrasonics International. **38**: 889—1965

Meeting on Quantitative Aspects of Hearing. **38**: 382—1965

Membership grows in U. K. Acoustical Groups. **38**: 156—1965

New AIP Style Manual. **38**: 151—1965

New guide to Federal Research and Development Reports. **38**: 887—1965

1965 Ultrasonics Symposium. **38**: 152—1965

Publication on the mode theory of wave propagation planned by NBS. **38**: 680—1965

Rheology meetings. **38**: 1068—1965

School on Sound-Transmission Loss. **38**: 681—1965

Shock and Vibration Symposium. **38**: 886—1965

Society of Engineering Science will meet. **38**: 152—1965

Standards Institute proposed. **38**: 380—1965

Standards notes. **38**: 486, 678—1965

0.5 General Acoustics Notes

Book Reviews

Sound Waves and Light Waves. Winston E. Kock. (Reviewed by Frederick E. White.) **38**: 384—1965

News

Acoustical Consultants elect officers. **38**: 1068—1965

Fifth International Congress on Acoustics, Liège, 1965. **38**: 1070—1965

Vth International Congress on Acoustics: proceedings. **38**: 685—1965

First Latin American Meeting on Acoustics: second report. **38**: 495—1965

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0.6 Biographical, Historical, and Personal Notes, not of the Acoustical Society of America

A. B. Wood Memorial Fund. **38**: 494—1965

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0.7 Editorials

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1 ACOUSTICAL SOCIETY OF AMERICA

1.1 General, Unclassified

Back issues of JASA wanted. Wallace Waterfall, Secretary. **38**: 678—1965
Information for contributors to *The Journal of the Acoustical Society of America*. **38**: xiv—1965
Report of the Treasurer. **38**: 378—1965
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1.2 Constitution and Bylaws

Proposed amendment to bylaws. **38**: 151—1965

1.5 Meetings

Author Index to papers presented at the 70th Meeting of the Acoustical Society of America. **38**: 943—1965
Dates of future meetings of the Society. **38**: 153, 381, 493, 682, 888, 1069—1965
Program of the Seventieth Meeting of the Acoustical Society of America, Chase-Park Plaza Hotel, St. Louis, Missouri, 3–6 November 1965. **38**: 910—1965
Rules and instructions for the preparation of abstracts of papers to be presented at meetings of the Acoustical Society of America. **38**: 152, 380, 492, 681, 887, 1068—1965
70th meeting of the Acoustical Society of America. Wallace Waterfall, Secretary. **38**: 376—1965
69th Meeting, 1965, Washington. Cyril M. Harris, President. **38**: 373—1965

1.6 Members and Membership Lists

Acoustics program established at The Pennsylvania State University. **38**: 486—1965
C. J. Lebel 1905–1965. **38**: 150—1965
Dr. Georg von Békésy receives award. **38**: 376—1965
Donald Ross returns from ONR, London. **38**: 1071—1965
H. Horton Sheldon 1891–1964. **38**: 150—1965
Ira J. Hirsh becomes Director of Research at Central Institute for the Deaf. **38**: 486—1965
Michel Copel named 1964 Scientist of the Year by U. S. Navy Bureau of Ships. **38**: 678—1965
New Fellows of the Acoustical Society of America. **38**: 485, 677—1965
New Officers of the Society. **38**: 150—1965
Revisions to membership list. **38**: 153, 682—1965
Sustaining members. **38**: x, viii, x, viii, viii, viii—1965
The Gold Medal, 1965, Hallowell Davis. Ira J. Hirsh. **38**: 374—1965
University of California scientist honored for Navy's sea-going lab. **38**: 1067—1965

1.7 Committee Activities

Annual reports of Technical Committees. **38**: 1065—1965
Members of Administrative and Technical Committees of the Acoustical Society of America. Wallace Waterfall, Secretary. **38**: 490—1965
Technical Committees of the Society and their Chairmen. **38**: 152, 381, 493, 682, 888, 1069—1965

1.8 Prizes, Medals, and Awards

The Gold Medal, 1965, Hallowell Davis. Ira J. Hirsh. **38**: 374—1965

1.9 Regional Chapters

Regional Chapter news. **38**: 380—1965
Regional Chapter notes. **38**: 151, 886—1965

2 ARCHITECTURAL ACOUSTICS

2.1 General, Unclassified

Abstracts
Reduction of plumbing noise in a multistory building. Ewart A. Wetherill. **38**: 936—1965

Book Reviews
Collected Papers on Acoustics. Wallace Clement Sabine. (Reviewed by Leo L. Beranek.) **38**: 496—1965
Environmental Control. Robert E. Fischer, Editor. (Reviewed by T. D. Northwood.) **38**: 158—1965
Room and Building Acoustics and Noise Abatement. Willi Furrer. (Reviewed by Robert H. Tanner.) **38**: 385—1965

News
School on Sound-Transmission Loss. **38**: 681—1965

2.4 Sound Absorption: Theory and Methods of Measurement of. (See also 2.5.)

Papers
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Letters to the Editor
Response to "Comments on 'New method of measuring reverberation time'" [P. W. Smith, Jr., J. Acoust. Soc. Am. **38**, 359(L) (1965)]. M. R. Schroeder. **38**: 359—1965

2.5 Materials for Sound Absorption. Values of Absorption Coefficients and Acoustic Impedances

Papers
Effect of humidity on sound-transmission loss. Allen H. Shiner and Maurice J. Marchello. **38**: 1040—1965

Patents
Acoustical ceiling. William B. Ball, Jr. **38**: 904—1965
Acoustical tile. Willis M. Rees and Donald N. Huggins. **38**: 904—1965
Acoustical tile and method of producing the same. Cresswell E. Stedman. **38**: 903—1965
Foamed plastic sound absorbing material. John Karpovich and Robert J. Dufresne. **38**: 904—1965
Sound-absorbing wall covering. Antonio Boschi and Giancarlo Pennati. **38**: 903—1965

2.6 Noise Reduction by Increased Room Absorption

Abstracts
Acoustic characteristics of space-simulation chambers at low pressures. Bjorn Weichbrodt. **38**: 937—1965

2.7 **Reverberation and Echoes. (See also 2.3, 2.4, 2.8, 2.9, 2.10, 11.2, 11.4, and 11.7.) Normal Modes in Rooms. Diffusivity. Frequency Response. Subjective Effects**

Letters to the Editor

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Response to "Comments on 'New method of measuring reverberation time'" [P. W. Smith, Jr., J. Acoust. Soc. Am. **38**, 359(L) (1965)]. M. R. Schroeder. **38**: 359—1965

Abstracts

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2.8 **Reverberation-Measuring Instruments. (See also 2.7 and 5.15.)**

Letters to the Editor

Response to "Comments on 'New method of measuring reverberation time'" [P. W. Smith, Jr., J. Acoust. Soc. Am. **38**, 359(L) (1965)]. M. R. Schroeder. **38**: 359—1965

Patents

Automatic measurement of reverberation time. Manfred R. Schroeder. **38**: 904—1965

2.9 **Sound Transmission through Walls, Theory and Methods of Measurement of. (See also 2.10.)**

Papers

Study of methods for estimating loudness. Edith L. R. Corliss and George E. Winzer. **38**: 424—1965

Subjective judgments of footstep-noise transmission through floors. D. Olynyk and T. D. Northwood. **38**: 1035—1965

Letters to the Editor

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Abstracts

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News

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2.10 **Sound-Insulating Structures. Values of Transmission Coefficients. (See also 7.6.)**

Papers

Effect of humidity on sound-transmission loss. Allen H. Shiner and Maurice J. Marchello. **38**: 1040—1965

Re-vision of the speech-privacy calculation. Robert W. Young. **38**: 524—1965

Subjective judgments of footstep-noise transmission through floors. D. Olynyk and T. D. Northwood. **38**: 1035—1965

Patents

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2.12 **Damping of Panels**

Abstracts

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3 **BOOKS, BIBLIOGRAPHIES, AND SURVEYS**

3.1 **Books and Book Reviews**

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Mechanics of Incremental Deformations. Maurice A. Biot. (Reviewed by Warren P. Mason.) **38**: 688—1965

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3.3 Patents

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4 PHYSIOLOGICAL AND PSYCHOLOGICAL ACOUSTICS

4.1 General, Unclassified

Papers

Continuity effects with alternately sounded noise and tone signals as a function of manner of presentation. Lloyd Elfner and William E. Caskey. **38**: 543—1965

Learning to identify complex sounds: prompting versus confirmation. Norman A. Sidley, Eugene Winograd, and Erwin W. Bedarf. **38**: 1050—1965

Subjective judgments of footstep-noise transmission through floors. D. Olynyk and T. D. Northwood. **38**: 1035—1965

News

Beltone translations of *Experiments on Binaural Hearing in Noise*. **38**: 1068—1965

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4.2 Anatomy and Physiology of the Ear

Papers

Cochlear-microphonic and summating potentials and the outputs of individual hair-cell generators. I. C. Whitfield and H. F. Ross. **38**: 126—1965

Rôle of the pinna in hearing. William E. Flynn and D. N. Elliott. **38**: 104—1965

Abstracts

Effects of transecting the brachium of the inferior colliculus upon auditory cortex potentials elicited by clicks. Norman L. Strominger and Philip C. Nieder. **38**: 917—1965

4.2.1 Middle-Ear Mechanics

Abstracts

Middle-ear-muscle effects in the rabbit. G. Richard Price. **38**: 917—1965

Middle-ear-muscle effects on low-intensity sounds. G. Richard Price. **38**: 918—1965

Reliability of acoustic reflex responses obtained by a relative measurement method. John L. Peterson, Lloyd E. Lamb, and Sven Hansen. **38**: 918—1965

4.2.2 Cochlear Mechanics

Papers

Cochlear-microphonic and summating potentials and the outputs of individual hair-cell generators. I. C. Whitfield and H. F. Ross. **38**: 126—1965

Subtitles

Cochlear mechanics. F. E. Toole and B. McA. Sayers. **38**: 770—1965

4.2.3 Models of the Ear

Papers

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Temporal effects in simultaneous masking and loudness. Eberhard Zwicker. **38**: 132—1965

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Effect of filter type on energy-detection models for auditory signal detection. M. V. Mathews and Sheila M. Pfafflin. **38**: 1055—1965

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Cortical vestibular projection in the cat. Bosko Milojevic. **38**: 917—1965

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Model for spontaneous and synchronous activity in single neurons. Earl J. Kletsky, William B. Adams, and Jozef J. Zwislocki. **38**: 916—1965

ROC curves from an ear model. Lloyd A. Jeffress and Audley D. Gaston, Jr. **38**: 928—1965

Some consequences of a hypothesis concerning neuron logic in the ear. Henry B. Karplus. **38**: 916—1965

Subtitles

Models of the ear. F. E. Toole and B. McA. Sayers. **38**: 770—1965

4.2.4 Cochlear Electrophysiology

Papers

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Cortical vestibular projection in the cat. Bosko Milojevic. **38**: 917—1965

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Middle-ear-muscle effects in the rabbit. G. Richard Price. **38**: 917—1965

Middle-ear-muscle effects on low-intensity sounds. G. Richard Price. **38**: 918—1965

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4.2.5 Auditory Nerve and Central Pathways

Papers

Inferences of neural activity associated with binaural acoustic images. F. E. Toole and B. McA. Sayers. **38**: 769—1965

Neurophysiological evidence for the Stevens power function in man. W. D. Keidel and M. Spreng. **38**: 191—1965

Abstracts

Model for spontaneous and synchronous activity in single neurons. Earl J. Kletsky, William B. Adams, and Jozef J. Zwislocki. **38**: 916—1965

Some consequences of a hypothesis concerning neuron logic in the ear. Henry B. Karplus. **38**: 916—1965

4.3 **Binaural Hearing. Localization**

Papers

Binaural beats and binaural amplitude-modulated tones: successive comparison of loudness fluctuations. Jacques Rutschmann and Leo Rubinstein. **38**: 759—1965

Continuity effects with alternately sounded noise and tone signals as a function of manner of presentation. Lloyd Elfner and William E. Caskey. **38**: 543—1965

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Masking-level differences as a function of interaural disparities in intensity of signal and of noise. James P. Egan. **38**: 1043—1965

Narrow-band noise and tones as signals in binaural detection. Mark E. Rilling and Lloyd A. Jeffress. **38**: 202—1965

Release from masking for speech. Peter B. Weston, James D. Miller, and Ira J. Hirsh. **38**: 1053—1965

Rôle of the pinna in hearing. William E. Flynn and D. N. Elliott. **38**: 104—1965

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Time-intensity relations in binaural unmasking. H. S. Colburn and N. I. Durlach. **38**: 93—1965

Abstracts

Binaural masking-level difference and frequency discrimination. G. Bruce Henning. **38**: 929—1965

Binaural unmasking of periodic pulses: effects of interaural time and spectral content. J. L. Flanagan and B. J. Watson. **38**: 929—1965

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Masking-level differences for monaural signals binaurally masked. Terrence R. Dolan, Bruce H. Deatherage, and Ervin R. Hafter. **38**: 928—1965

4.4 **Deafness. (See also 5.5.)**

Papers

Study of noise and hearing in jute weaving. W. Taylor, J. Pearson, A. Mair, and W. Burns. **38**: 113—1965

Letters to the Editor

Everyday-speech intelligibility. J. C. Webster, Hallowell Davis, and W. Dixon Ward. **38**: 668—1965

Abstracts

Amplitude of Békésy tracings with different attenuation rates. F. Harbert and I. M. Young. **38**: 923—1965

Analysis-synthesis of glottal excitation. Sheldon B. Michaels and William J. Strong. **38**: 935—1965

Discrimination of spectral cutoff frequency in residual hearing and in normal hearing. J. M. Pickett, Robert L. Daly, and Susan L. Brand. **38**: 923—1965

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Subtractive hearing loss, loudness recruitment, and decruitment. Hallowell Davis and Allan C. Goodman. **38**: 922—1965

News

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4.4.5 **Auditory Fatigue, Temporary Threshold Shift**

Papers

Study of noise and hearing in jute weaving. W. Taylor, J. Pearson, A. Mair, and W. Burns. **38**: 113—1965

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Three time parameters of central masking. Jozef J. Zwislocki. E. Buining, and J. Glantz. **38**: 938—1965

4.5 **Instruments Relating to Hearing and for the Testing of Hearing. (See also 5.5.)**

Letters to the Editor

Everyday-speech intelligibility. J. C. Webster, Hallowell Davis, and W. Dixon Ward. **38**: 668—1965

Abstracts

Development of tests for evaluating the performance of hearing aids. Edith L. R. Corliss, E. D. Burnett, and J. T. Priestley. **38**: 922—1965

Head-baffle effect for different hearing-aid microphone locations. Samuel F. Lybarger and Fred E. Barron. **38**: 922—1965

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Patents

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Hearing aid earpiece. Charles W. Strazalkowski. **38**: 515—1965

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Method and apparatus for improving hearing. Hans J. Salamon and Leo H. Schaudinischky. **38**: 690—1965

Transducer mounting. Dean W. Flygstad. **38**: 905—1965

4.6 Loudness, Threshold Determinations

Papers

Judged noisiness of a band of random noise containing an audible pure tone. K. D. Kryter and K. S. Pearsons. **38**: 106—1965

Measurement of auditory thresholds. A. E. Brown. **38**: 86—1965

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Talking levels for a number of assigned communication tasks. Mark B. Gardner. **38**: 921—1965

Variability in bone-conduction thresholds. Laura Ann Wilber and Victor Goodhill. **38**: 922—1965

4.7 Masking. (See also 5.5.)

Papers

Changes in the simultaneous masked threshold of brief tones. Lois L. Elliott. **38**: 738—1965

Effect of masking on the pitch of periodic pulses. Aaron E. Rosenberg. **38**: 747—1965

Masking-level differences as a function of interaural disparities in intensity of signal and of noise. James P. Egan. **38**: 1043—1965

Narrow-band noise and tones as signals in binaural detection. Mark E. Rilling and Lloyd A. Jeffress. **38**: 202—1965

Reaction-time distributions in the detection of weak signals in noise. Edward C. Carterette, Morton P. Friedman, and Robert Cosmides. **38**: 531—1965

Release from masking for speech. Peter B. Weston, James D. Miller, and Ira J. Hirsh. **38**: 1053—1965

Temporal effects in simultaneous masking and loudness. Eberhard Zwicker. **38**: 132—1965

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Letters to the Editor

Effect of filter type on energy-detection models for auditory signal detection. M. V. Mathews and Sheila M. Pfafflin. **38**: 1055—1965

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Backward masking of short tones by narrow- and wide-band noise bursts. Lois L. Elliott. **38**: 928—1965

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Interaural time and intensity difference: and the MLD. Stanley Zerlin. **38**: 929—1965

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Variability in bone-conduction thresholds. Laura Ann Wilber and Victor Goodhill. **38**: 922—1965

4.8 Phase Effects. (See also 4.3.)

Papers

Binaural beats and binaural amplitude-modulated tones: successive comparison of loudness fluctuations. Jacques Rutschmann and Leo Rubinstein. **38**: 759—1965

Experiments on the four-eared man. Neville Moray, A. Bates, and T. Barnett. **38**: 196—1965

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Time–intensity relations in binaural unmasking. H. S. Colburn and N. I. Durlach. **38**: 93—1965
Tonal consonance and critical bandwidth. R. Plomp and W. J. M. Levelt. **38**: 548—1965

Abstracts
Control-display time-lag effects with tracking to auditory and visual displays. David A. Hodgson. **38**: 937—1965
Monaural phase effects in auditory signal detection. James E. Fricke. **38**: 939—1965

4.9 Pitch. Absolute Pitch

Papers
Effect of masking on the pitch of periodic pulses. Aaron E. Rosenberg. **38**: 747—1965
Tonal consonance and critical bandwidth. R. Plomp and W. J. M. Levelt. **38**: 548—1965

Letters to the Editor
Time-separation pitch associated with correlated noise bursts. Max E. McClellan and Arnold M. Small, Jr. **38**: 142—1965

Abstracts
Click heard when a musical tone makes an abrupt frequency change. Herbert M. Neustadt. **38**: 938—1965
Pitch discrimination of jittered pulse trains. A. E. Rosenberg. **38**: 939—1965
Pitch quantizing for computer music. M. V. Mathews and Joan E. Miller. **38**: 913—1965
Time-separation pitch associated with correlated noise pulses. Max E. McClellan and Arnold M. Small, Jr. **38**: 939—1965

4.10 Subjective Tones

Papers
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Letters to the Editor
Time-separation pitch associated with correlated noise bursts. Max E. McClellan and Arnold M. Small, Jr. **38**: 142—1965

4.11 Theories of Hearing

Papers
Changes in the simultaneous masked threshold of brief tones. Lois L. Elliott. **38**: 738—1965
Experiments on the four-eared man. Neville Moray, A. Bates, and T. Barnett. **38**: 196—1965
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Effect of filter type on energy-detection models for auditory signal detection. M. V. Mathews and Sheila M. Pfafflin. **38**: 1055—1965

Errata
Temporal summation in vibrotactile sensitivity [J. Acoust. Soc. Am. **37**, 843–846 (1965)]. R. T. Verrillo. **38**: 472—1965

4.12 Timbre

Papers
Judged noisiness of a band of random noise containing an audible pure tone. K. D. Kryter and K. S. Pearsons. **38**: 106—1965
Learning to identify complex sounds: prompting versus confirmation. Norman A. Sidley, Eugene Winograd, and Erwin W. Bedarf. **38**: 1050—1965
Tonal consonance and critical bandwidth. R. Plomp and W. J. M. Levelt. **38**: 548—1965

Letters to the Editor
Refraction of injected sound by a very cold nitrogen jet. E. Grande. **38**: 1063—1965

4.14 Use of Ear Protectors, Earplugs

Patents
Ear protector. Harry A. French. **38**: 515—1965
Sound attenuating device and supporting means in a helmet. Jackson A. Aileo. **38**: 690—1965

4.15 Perception of Signals

Papers
Changes in the simultaneous masked threshold of brief tones. Lois L. Elliott. **38**: 738—1965
Continuity effects with alternately sounded noise and tone signals as a function of manner of presentation. Lloyd Elfner and William E. Caskey. **38**: 543—1965
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Abstracts
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Control-display time-lag effects with tracking to auditory and visual displays. David A. Hodgson. **38**: 937—1965
Correlation between multiple observers in correlated and independent noise. Robert C. Bilger. **38**: 928—1965
Detection of a narrow-band noise as a function of its interaural correlation. W. A. Wilbanks and John K. Whitmore. **38**: 929—1965
Discrimination of spectral cutoff frequency in residual hearing and in normal hearing. J. M. Pickett, Robert L. Daly, and Susan L. Brand. **38**: 923—1965
Effect of high- and low-filtered noise on intelligibility of filtered speech. Sadanand Singh, Sonia P. Brokaw, and James E. Fricke. **38**: 923—1965
Interaural noise correlation and detection of low-frequency monaural signals. John K. Whitmore and W. A. Wilbanks. **38**: 929—1965
Interaural time and intensity difference and the MLD. Stanley Zerlin. **38**: 929—1965
Listener judgments of motor-perceptual characteristics of bisyllable nonsense words. Donald J. Baker. **38**: 923—1965
Monaural phase effects in auditory signal detection. James E. Fricke. **38**: 939—1965
Pitch discrimination of jittered pulse trains. A. E. Rosenberg. **38**: 939—1965
Psychophysical investigation of auditory sensitization. Bruce H. Deatherage, Donald Henderson, Ervin R. Hafter, and Terrence R. Dolan. **38**: 938—1965
Statistics of interaural time differences under antiphasic stimulus conditions. Lloyd A. Jeffress and Audley D. Gaston, Jr. **38**: 929—1965
Time-separation pitch associated with correlated noise pulses. Max E. McClellan and Arnold M. Small, Jr. **38**: 939—1965

4.16 Vibration and Tactile Senses

Errata
Temporal summation in vibrotactile sensitivity [J. Acoust. Soc. Am. **37**, 843-846 (1965)]. R. T. Verrillo. **38**: 472—1965

5 ACOUSTICAL INSTRUMENTS AND APPARATUS. (See also 2.8, 4.5, 9.6, 10.3, 12.3, 12.3p, 12.3z, 13.11, 13.11n, and 13.11t.)

5.1 General, Unclassified

Papers
Acoustic water tunnel. R. M. Fand. **38**: 561—1965

Patents
Air-operated sounding toy. Gustav H. Bischoff. **38**: 690—1965
Bird simulating whirling sounding toy. Frank M. Amato. **38**: 176—1965

5.3 Acoustic-Impedance Measurement. (See also 11.5 and 12.3z.)

Papers
Acoustic water tunnel. R. M. Fand. **38**: 561—1965

Letters to the Editor
Acoustic bridge for the measurement of liquid quantity. Thomas L. Ward. **38**: 1056—1965

5.4 Analyzers and Filters, Acoustic and Electric. Oscillographs. Acoustic Delay Lines and Resonators. (See also 5.15 and 12.3f.)

Abstracts
Computer study of trumpet tones. J. C. Risset. **38**: 912—1965
Computer study of violin tones. M. V. Mathews, Joan E. Miller, J. R. Pierce, and James Tenney. **38**: 912—1965
Technique for the analysis of musical-instrument tones. M. David Freedman. **38**: 912—1965

Patents
Electromechanical reed system. Albert L. Cavalieri, Jr., and Robert W. Roop. **38**: 177—1965
Electrostatic vibration transducer. Gareth M. Davidson and Jack Kritz. **38**: 177—1965
Mechanical resonator. Gustave L. Grundmann and James E. Albright. **38**: 386—1965
Oscillograph apparatus. Herbert I. Chambers, Albert W. Fischer, Kauno E. Sihvonen, and Gardner P. Wilson. **38**: 386—1965
Ultrasonic delay line having means to reduce third-time echo. Harold A. Brouneus. **38**: 516—1965
Ultrasonic strip delay lines. Allen H. Meitzler. **38**: 387—1965
Ultrasonic transmitter. Angelo Gino Lazzery. **38**: 387—1965
Ultrasonic transmitter mechanism. Gustave L. Grundmann. **38**: 386—1965

News
Standards notes. **38**: 151—1965

5.5 Audiometers. (See also 4.4 and 4.5.)

Papers
Neurophysiological evidence for the Stevens power function in man. W. D. Keidel and M. Spreng. **38**: 191—1965

Abstracts
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Subtitles
Audiometers. W. Taylor, J. Pearson, A. Mair, and W. Burns. **38**: 114—1965

5.8 **Loudspeakers, Horns, Measurements. Practical Sound Sources. (See also 5.13, 5.17, and 5.18.)**

Papers
Electropneumatic acoustic generator. Walter T. Fiala, J. K. Hilliard, J. A. Renkus, and John J. Van Houten. **38**: 956—1965
Family of cylindrical velocity transformers; study by analog computer techniques. L. T. Russell and H. S. Heaps. **38**: 47—1965
Modulated combustion (Dragon) loudspeaker. James S. Arnold. **38**: 416—1965
Underwater sound transducer with a conical-shell radiation pattern. D. R. Sanders. **38**: 412—1965

Abstracts
High-intensity air-modulator noise source. Kenneth McK. Eldred. **38**: 941—1965

Patents
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Loudspeaker construction. Adelore F. Petrie. **38**: 1074—1965
Loud-speaker enclosure. Wilbur L. Maddy. **38**: 177—1965

5.9 **Microphones. Microphone-Calibration Equipment and Techniques. (See also 5.18, 12.3p, and 13.11t.)**

Abstracts
Development of tests for evaluating the performance of hearing aids. Edith L. R. Corliss, E. D. Burnett, and J. T. Priestley. **38**: 922—1965
Head-baffle effect for different hearing-aid microphone locations. Samuel F. Lybarger and Fred E. Barron. **38**: 922—1965
Shock-tube techniques for pressure calibration of microphones. H. E. Dahlke, D. A. Robinson, and John J. Van Houten. **38**: 937—1965

Patents
Acoustic resonance chamber. Helmut Karl Kohler. **38**: 1075—1965
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Diaphragm means for acoustic translating devices. George C. Tibbetts. **38**: 177—1965
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5.11 **Oscillators, Electrical and Mechanical**

Letters to the Editor
Generation and synthesis of tone complexes. Aubrey T. Hickman. **38**: 472—1965

5.13 **Sound-Reproducing Systems, Including Public-Address Systems, Stereophonic Reproduction**

Patents
Single channel binaural or stereophonic sound system. Robert Oakes Jordan and James Cunningham. **38**: 387—1965
Sound head set. James E. Thomas. **38**: 516—1965
Sound reproduction apparatus. Yoshiaki Tamura, George W. Carmichael, and Panos D. Georgantas. **38**: 690—1965

5.16 **Sound Recording and Reproducing. General**

Patents
Artificial reverberation network. Benjamin F. Logan, Jr., and Manfred R. Schroeder. **38**: 905—1965
Loudspeakers. Harry F. Olson and John Preston. **38**: 905—1965
Noise suppression system. Edgar C. Zane. **38**: 1075—1965
Wide band recording system. Thomas A. Banning, Jr., and Emil L. Ranseen. **38**: 178—1965

5.16d **Mechanical Recording and Reproducing**

Patents
Anti-skate device. Frank T. Scalera. **38**: 1075—1965
Carrying arms for sound reproduction pick-ups. Percy Wilson. **38**: 1075—1965
Phonograph monaural-binaural switching device. Wetherby Boorman. **38**: 516—1965
Portable sound translating device. Ernest P. P. Tatter and Peter W. Tappan. **38**: 516—1965
Reproducing apparatus for use with sound records of the embossed type. Joseph A. Rescsanski and John G. Wallace. **38**: 1075—1965
Sound reproduction apparatus. Herman H. Lowell. **38**: 1075—1965
Speed changer for a record player. Horst Zarm. **38**: 516—1965
Stereophonic phonograph system. John A. Tourtellot. **38**: 516—1965

5.16f **Photographic Recording and Reproducing**

Patents
Recording and reproduction of intelligence signals. Raymond R. McDaniel. **38**: 690—1965

5.16m **Magnetic Recording and Reproducing**

Letters to the Editor
Automation of sound transfer from a tape recorder to the Sonagraph. J. Frydman. **38**: 143—1965

Patents
Apparatus and method for controlling remotely-operated dictation equipment. Lloyd R. Jones, Roger C. Curtis, and Marion P. Shorb. **38**: 179—1965
Apparatus and method for splicing tape having means for locating magnetic particles on the tape. Myron W. Gates, Jr. **38**: 178—1965
Apparatus for applying magnetic sound track. Albert E. Beguin. **38**: 178—1965
Apparatus for duplicating magnetic recordings. Abraham A. Goldberg. **38**: 387—1965
Apparatus for manifesting intelligence on record media. Harry Charnetsky, Jr., and William R. Maclay. **38**: 178—1965
Device on or in a recording and/or reproducing apparatus, preferably a magnetic reproducer, with magazines. Gerhard Missriegler and Friedrich Laa. **38**: 388—1965
Hall element magnetic transducer. Marvin Camras and James J. Brophy. **38**: 388—1965
Hydrodynamically air lubricated magnetic tape head. Heard K. Baumeister and Vladimir Nejezchleb. **38**: 179—1965
Installation for reproducing sound from a stationary sound record area. Werner K. Bender. **38**: 691—1965
Interchangeable magnetic record tape and method of making same. Marvin Camras. **38**: 387—1965
Low power tape drive mechanism. Robert L. Peshel and Leonard M. Hoffman. **38**: 389—1965
Magnetic recording and recording means. Vladimir K. Zworykin and Paul K. Weimer. **38**: 178—1965
Magnetic recording apparatus. William H. Cox. **38**: 178—1965
Magnetic tape feeding device for magnetic recording and reproducing apparatus. Takushi Yasuda and Yoshimasa Fujimoto. **38**: 389—1965
Magnetic tape recorder and reproducer. Lawrence V. Guest. **38**: 388—1965
Magnetic tone arm suspension. Joe F. Brock. **38**: 517—1965
Magnetic transducer assembly. Robert N. Wheeler and John Beumer, Jr. **38**: 179—1965
Manufacture of magnetic records. Josef Groak. **38**: 178—1965
Means for maintaining spacing of a magnetic transducer from a rotary magnetic drum. Johannes Antonius van Lammeren, Herre Rinia, and Leopold Michael Lambert Joseph Leblans. **38**: 179—1965
Reel support for magnetic recording tapes. Siegmund Loewe. **38**: 388—1965
Repetitive scanning of a record track on a fragment of a record. Sumner Gordon and William F. Saars. **38**: 387—1965
Reproducing circuit for magnetic recorder. Leonard Dodge Barry. **38**: 179—1965
Servo system for magnetic tape machine. Robert E. Young and Robert A. Payne. **38**: 388—1965
Sound recording and reproducing apparatus driving mechanism. Günter Herrmann and Reinhard Goerlich. **38**: 388—1965
Tape recorder. Maurice E. Hardy. **38**: 178—1965

5.16s Electrostatic Recording and Reproducing

Patents
Electrostatic recorder. Victor C. Anderson. **38**: 389—1965

5.17 Telephones, Telephone Earphones. (See also 5.13.) Intercommunication Systems

Papers
Evaluation of new couplers for circumaural earphones. K. K. Charan, J. R. Cox, Jr., and Arthur F. Niemoeller. **38**: 945—1965

Patents
Damped magnetic telephone receiver. William Kuskin. **38**: 179—1965
Intercommunication system. John Earl Chapman. **38**: 691—1965
Sound detection system and alarm system. Ambrose J. Metz. **38**: 517—1965
Telephone amplifier. Arthur J. Moser. **38**: 691—1965
Telephone instrument controlling device. Milton L. Snow. **38**: 691—1965

5.18 Transducing Principles, Structures and Materials, General. (See also 5.8, 5.9, 5.17, 10.3, 12.3p, 13.7, and 13.11t.)

Papers
Coupling between two modes of vibration in a piezoelectric resonator. M. Redwood. **38**: 576—1965
Minor-lobe level as a function of tolerance on variations in individual-element sensitivity in four-element line arrays. Daniel F. Suchman. **38**: 723—1965
Properties of transducer ceramics under maintained planar stress. R. F. Brown and G. W. McMahon. **38**: 570—1965
Transducers for exciting and detecting acoustic waves in discharge-tube plasmas. William A. Saxton. **38**: 965—1965
Underwater sound transducer with a conical-shell radiation pattern. D. R. Sanders. **38**: 412—1965

Letters to the Editor
Predicting the effective dynamic coupling coefficient of the flextensional transducer (preliminary design considerations). L. H. Royster. **38**: 879—1965

Abstracts
Development of tests for evaluating the performance of hearing aids. Edith L. R. Corliss, E. D. Burnett, and J. T. Priestley. **38**: 922—1965

Patents
Acoustic absorber pad. Forrest E. Coyle and Frank P. Hodges. **38**: 905—1965
Hearing aid transducer support. John A. Victoreen. **38**: 179—1965

5.18d Electrodynamic Transducers

Patents
Acoustical device. Joachim Herbert Todt. **38**: 1076—1965
Two-system dynamic earphone. Rudolph Görike. **38**: 179—1965

5.18f Magnetostrictive Transducers

Papers
Inverse magnetostrictive effect of ultrasonic stress waves in steel. B. Langenecker. **38**: 234—1965

Patents
Magnetostrictive delay line. Emerson W. Pugh. **38**: 691—1965

Magnetostrictive resonator device with sinusoidally varying exciting field. Max Preisinger. **38**: 389—1965
Magnetostrictive-transducer apparatus. Richard C. Heim. **38**: 692—1965
Magnetostrictive transducer apparatus. Edwin B. Wright. **38**: 180—1965

5.18p **Piezoelectric Transducers, Ferroelectrics**

Papers
Coupling between two modes of vibration in a piezoelectric resonator. M. Redwood. **38**: 576—1965
Properties of transducer ceramics under maintained planar stress. R. F. Brown and G. W. McMahon. **38**: 570—1965
Underwater sound transducer with a conical-shell radiation pattern. D. R. Sanders. **38**: 412—1965

Abstracts
Laser-beam-induced ultrasonic waves in glass. William W. Lester. **38**: 931—1965

Subtitles
Piezoelectric transducers. R. M. Fand. **38**: 563—1965

Patents
Miniaturized piezoelectric crystal device. George F. Fisher. **38**: 691—1965
Piezoelectric crystal apparatus. Rudolf H. Bechmann. **38**: 389—1965
Piezoelectric transducer. Lucien A. Petermann. **38**: 517—1965
Piezoelectric transducer. Donald L. White. **38**: 905—1965
Piezoelectric transducers. Florence Nesh. **38**: 517—1965
Piezoresistive transducer employing P-type lead telluride (PbTe) as the piezoresistive material. L. E. Hollander, Jr. **38**: 691—1965
Transducer. Bernard A. Shoor. **38**: 905—1965

5.19 **Tuning Forks, Frequency Standards, Frequency-Measuring and -Recording Instruments. Time Standards. Chronographs**

Patents
Mechanical vibrator for time base. Yoshiaki Kato and Kazuo Tanaka. **38**: 1076—1965
Tuning fork frequency adjuster. William O. Bennett, William W. Mutter, and Egbert Van Haaften. **38**: 1076—1965
Vibratory motion converter for an electric timepiece. Kazuo Tanaka and Yoshiaki Kato. **38**: 1076—1965

6 MUSIC AND MUSICAL INSTRUMENTS

6.1 **General, Unclassified**

Papers
Tonal consonance and critical bandwidth. R. Plomp and W. J. M. Levelt. **38**: 548—1965

Abstracts
Technique for the analysis of musical-instrument tones. M. David Freedman. **38**: 912—1965

Patents
Educational musical toys. Folke Hugo Torsten Swensson. **38**: 906—1965
Fountain displays. John P. Pribyl. **38**: 390—1965
Method and means for tuning musical instruments. Claude P. Van Ooyen. **38**: 1076—1965
Music note pitch teaching device. Kenneth B. Low, Jr., and Charles Goetz-Gabor. **38**: 692—1965
Note finder. Albert McDowell. **38**: 692—1965
Tuning fork anvil. Joseph Singerman. **38**: 692—1965

6.2 **Bells, Xylophones. Other Instruments Having Rigid Vibrators**

Patents
Musical clapping instruments. Toivo Miettinen. **38**: 517—1965
Percussion musical instrument. Hans Gugelot and and Helmut A. Müller. **38**: 517—1965
Stand with improved sock cymbals. Russel Ross. **38**: 906—1965

6.3 **Brass Wind Instruments (Lip-Vibrated)**

Abstracts
Computer study of trumpet tones. J. C. Risset. **38**: 912—1965

6.4 **Drums and Other Membranophonic Instruments**

Patents
Adjustable tuning indicator for pedal-tuned kettledrums. Charles L. White. **38**: 180—1965
Cymbal supports. Fred J. La Londe. **38**: 390—1965
Drum. Ralph C. Kester, Jr. **38**: 906—1965
Drumstick. Andrew C. Criscuolo. **38**: 692—1965
Drumstick. Harold R. Stys and Marion K. Konicki. **38**: 390—1965
Musical drum. William Gussak. **38**: 906—1965
Percussion instrument practice. Ronald Gould and Arnold Goldberg. **38**: 906—1965
Tuning gage for drums. Frank M. Toperzer, Jr. **38**: 180—1965

6.5 **Pipe Organs**

Papers
Resonance-absorption cross section of a pipe organ. A. H. Benade. **38**: 780—1965

Abstracts
Theory of flue-pipe sound generation. S. A. Elder. **38**: 913—1965
Wall vibrations in organ pipes and their effect on tone. John Backus. **38**: 912—1965

6.6 **Pianos and Other Keyboard Stringed Instruments**

Patents
Auxiliary keyboard. Lee L. Von Gunten. **38**: 692—1965
Chord teaching device. Herman B. Stinson, Jr., and Ivor G. Noon. **38**: 906—1965

News
Europiano Kongress 1965. **38**: 382—1965

6.7 **Violin Family. Stringed Instruments, Except Keyboard Type**

Abstracts
Computer study of violin tones. M. V. Mathews, Joan E. Miller, J. R. Pierce, and James Tenney. **38**: 912—1965

Patents
Bridges for stringed instruments such as for guitars. James Ormston Burns and Gordon Spencer Chandler. **38**: 693—1965
Capo tasto. James Dunlop. **38**: 906—1965
Chord attachment for guitars. Bruno Lukaszewsky and Peter Lukaszewsky. **38**: 693—1965
Controls for electrical string instruments. Chauncey Richard Evans. **38**: 693—1965
Electric guitar incorporating separate pickups for the wound and unwound strings. Clarence L. Fender. **38**: 693—1965
Guitar attachment. Roy E. J. De La Ronde and Garnet O. De Lucia. **38**: 390—1965
Guitar pick retention. James S. Phillips. **38**: 693—1965
Instrument with triple-bout acoustical body. Zalka Alarie Levasseur. **38**: 907—1965
Stringed instrument bridge and anchoring means. Jack C. Cookerly and George R. Hall. **38**: 518—1965
Stringed instrument of the viol type. Gerald H. Finch. **38**: 906—1965
Stringed musical instrument. Earl F. Anderson. **38**: 906—1965
Stringed musical instrument. Quilla H. Freeman. **38**: 390—1965
Stringed musical instrument bridge. Richard C. Jeranson. **38**: 693—1965
Tremolo device for stringed musical instruments. James D. Webster. **38**: 180—1965
Tremolo devices for stringed instruments. Jack L. Matthew and Albert Punturi. **38**: 518—1965
Tuning mechanism for a string musical instrument. Norval P. Ulrich. **38**: 694—1965
Violin teaching aid. Seymour Baderak. **38**: 907—1965
Violin with chin rest. Yehudi Menuhin and Ernö Meir Goldberger. **38**: 693—1965

News
First public performance of new instruments of the violin family. **38**: 380—1965

6.8 **Wood Winds**

Abstracts
Theory of flue-pipe sound generation. S. A. Elder. **38**: 913—1965

6.9 **Electrical Musical Instruments**

Patents
Electrically operated musical device. Ernest A. Pedicano. **38**: 907—1965

6.10 **Reed Organs. Accordions, Harmonicas**

Patents
Bellows operated musical instruments. Donald J. Winch. **38**: 907—1965
Output control for accordions. Irving A. Cardoza. **38**: 390—1965

6.12 **Intonation. Vibrato. Musical Scales. Musical Composition**

Abstracts
Pitch quantizing for computer music. M. V. Mathews and Joan E. Miller. **38**: 913—1965

6.13 **Electronic Music**

Letters to the Editor
Generation and synthesis of tone complexes. Aubrey T. Hickman. **38**: 472—1965

Abstracts
Click heard when a musical tone makes an abrupt frequency change. Herbert M. Neustadt. **38**: 938—1965
Pitch quantizing for computer music. M. V. Mathews and Joan E. Miller. **38**: 913—1965

7 **NOISE AND NOISE CONTROL**

7.1 **General, Unclassified**

Papers
Continuity effects with alternately sounded noise and tone signals as a function of manner of presentation. Lloyd Elfner and William E. Caskey. **38**: 543—1965
Detection of random acoustic signals by receivers with distributed elements: optimum receiver structures for normal signal and noise fields. David Middleton and Herbert L. Groginsky. **38**: 727—1965
Judged noisiness of a band of random noise containing an audible pure tone. K. D. Kryter and K. S. Pearsons. **38**: 106—1965
Narrow-band noise and tones as signals in binaural detection. Mark E. Rilling and Lloyd A. Jeffress. **38**: 202—1965
Temperature- and wind-dependent ambient noise under midwinter pack ice. J. H. Ganton and A. R. Milne. **38**: 406—1965

Letters to the Editor
Addendum: Spatial-correlation functions for various noise models [J. Acoust. Soc. Am. **34**, 1732–1736 (1962)]. Benjamin F. Cron and Charles H. Sherman. **38**: 885—1965
Correlation of ambient noise in the ocean. Elizabeth M. Arase and T. Arase. **38**: 146—1965
Space–time correlation in isotropic noise fields. Theron Usher, Jr. **38**: 148—1965

Abstracts
Backward masking of short tones by narrow- and wide-band noise bursts. Lois L. Elliott. **38**: 928—1965
Correlation between multiple observers in correlated and independent noise. Robert C. Bilger. **38**: 928—1965
Time-separation pitch associated with correlated noise pulses. Max E. McClellan and Arnold M. Small, Jr. **38**: 939—1965

Book Reviews
Physik und Technik der Lärmbekämpfung. G. Kurtze. (Reviewed by Henning E. von Gierke.) **38**: 1072—1965

News
Austrian meeting on Noise Control in Residential Areas. **38**: 494—1965
Austrian Noise Control Center Newsletter. **38**: 685—1965
Industrial Noise Manual. **38**: 886—1965

7.2 **Annoyance. Effect of Noise on Human Beings**

Papers

Re-vision of the speech-privacy calculation. Robert W. Young. **38**: 524—1965

Abstracts

Effects of sonic boom on people: review and outlook. Henning E. von Gierke. **38**: 913—1965

Effects of sonic boom on people: St. Louis, Missouri 1961–1962. Charles W. Nixon. **38**: 913—1965

Experience in the United Kingdom on the effects of sonic bangs. C. H. E. Warren. **38**: 914—1965

Laboratory tests of physiological–psychological reactions to sonic booms. K. D. Kryter. **38**: 914—1965

Reduction of plumbing noise in a multistory building. Ewart A. Wetherill. **38**: 936—1965

7.5 **Noise Spectra**

Papers

Study of methods for estimating loudness. Edith L. R. Corliss and George E. Winzer. **38**: 424—1965

Study of noise and hearing in jute weaving. W. Taylor, J. Pearson, A. Mair, and W. Burns. **38**: 113—1965

7.6 **Noise in Buildings. (See also 2.2.)**

Abstracts

Reduction of plumbing noise in a multistory building. Ewart A. Wetherill. **38**: 936—1965

7.7 **Machinery Noise. Mufflers. Noise Silencers**

Papers

Study of noise and hearing in jute weaving. W. Taylor, J. Pearson, A. Mair, and W. Burns. **38**: 113—1965

Abstracts

Boundary-layer-noise measurements on a large turbofan aircraft. J. S. Gibson. **38**: 921—1965

Effects of combustion instability on rocket-engine-noise sources and levels. Richard N. Tedrick. **38**: 921—1965

Experimental noise studies of inlet guide vane–rotor–stator interactions for a single-stage axial-flow compressor. J. L. Crigler and W. L. Copeland. **38**: 920—1965

Importance of noise-spectrum measurements for noise control in railway vehicles. Günther E. Urbanek and Edmund Hirschwehr. **38**: 920—1965

Model freon compressor for acoustic investigations. R. J. Wells and J. M. McGrew. **38**: 920—1965

Rotational noise of helicopter rotors. Robert King and Ronald G. Schlegel. **38**: 921—1965

Vortex noise of helicopter rotors. Ronald G. Schlegel and Harold R. Mull. **38**: 921—1965

Patents

Acoustical panel construction. James H. Gildard and Richard D. Lemmerman. **38**: 907—1965

Acoustic curb. Louis J. Jenn and William E. Morrison. **38**: 908—1965

Apparatus for muffling noise and engine exhaust gases. Edward H. Schomburg. **38**: 1078—1965

Gas silencer having gas flow ducts defined by tubular rings within a casing. Hans Karl Leistritz. **38**: 1078—1965

In flight jet silencer. Louis Duthion and Michel S. D. Hafenscher. **38**: 1077—1965

Noise filter. Harry E. Clary and Phillip L. Bailey. **38**: 1077—1965

Noise reducing means for transformer. Charles C. Honey, Lawrence R. Toothman, and Kenneth C. Stewart. **38**: 907—1965

Noise suppression device for turbo-jet engines. John A. Hay. **38**: 1077—1965

Sound absorber with partitions forming meandering channels connected to resonance duct. Franz Haag. **38**: 1078—1965

Sound absorbing panel for lining a duct. Bill G. Watters. **38**: 908—1965

Sound attenuating gas conduit and resonators therefor. Edmund Ludlow and Benjamin H. Irwin. **38**: 1077—1965

7.8 **Noise Generators (Solid, Liquid, and Gaseous). Sirens**

Patents

Device for simulating motor sounds. John W. Ryan. **38**: 1078—1965

Motor simulating sounding toy. John W. Ryan. **38**: 180—1965

Sounding wheeled toy. Marvin I. Glass and Arthur E. Neumann. **38**: 390—1965

7.10 **Aerodynamic Noise. Jet Noise**

Letters to the Editor

Noise from impinging, two-dimensional, underexpanded jet flows. William J. Sheeran and Darshan S. Dosanjh. **38**: 482—1965

Refraction of injected sound by a very cold nitrogen jet. E. Grande. **38**: 1063—1965

Abstracts

Acoustic losses from model rocket chambers. R. Slates, F. Buffum, G. Dehority, and E. Price. **38**: 921—1965

Boundary-layer-noise measurements on a large turbofan aircraft. J. S. Gibson. **38**: 921—1965

Design methods for minimization of sonic-boom pressure-field disturbances. F. Edward McLean and Barrett L. Shrout. **38**: 910—1965

Effects of combustion instability on rocket-engine-noise sources and levels. Richard N. Tedrick. **38**: 921—1965

Experimental noise studies of inlet guide vane–rotor–stator interactions for a single-stage axial-flow compressor. J. L. Crigler and W. L. Copeland. **38**: 920—1965

Infrasonic-noise power level and wind-velocity correlation study. Howard S. Bowman. **38**: 920—1965

Instrumentation and techniques for measurement of sonic-boom signatures. David A. Hilton and James W. Newman, Jr. **38**: 910—1965

Model freon compressor for acoustic investigations. R. J. Wells and J. M. McGrew. **38**: 920—1965

Nature of the sonic boom problem. Harvey H. Hubbard. **38**: 910—1965

Rotational noise of helicopter rotors. Robert King and Ronald G. Schlegel. **38**: 921—1965

Some effects of the nonuniform atmosphere on the propagation of sonic booms. E. J. Kane. **38**: 910—1965

Sonic-boom pressure-field estimation techniques. Harry W. Carlson, Robert J. Mack, and Odell A. Morris. **38**: 910—1965

Utilization of the Saturn S-1C booster as an acoustic source. Steve Dendrinos, Jr., and Robert E. Peskar. **38**: 920—1965
Vortex noise of helicopter rotors. Ronald G. Schlegel and Harold R. Mull. **38**: 921—1965

8 STANDARDS

8.1 General, Unclassified

International Standards. **38**: 679—1965
Standards Institute proposed. **38**: 380—1965
Standards notes. **38**: 151, 486, 678, 886—1965

9 SPEECH COMMUNICATION

9.1 General, Unclassified

Abstracts
Analysis of labial movement. Björn E. F. Lindblom and Henry I. Soron. **38**: 935—1965
Application of digital inverse filtering to the systematic variation of vowel parameters. John F. Hemdal. **38**: 935—1965
Distributions of silent periods in speech: stutterers versus nonstutterers. Charles S. Watson and Laura R. Love. **38**: 935—1965
Environmental influence on the speech of family members shown by spectrographic speech matching. L. G. Kersta. **38**: 935—1965
Talking levels for a number of assigned communication tasks. Mark B. Gardner. **38**: 921—1965

Patents
Sound therapy device. Melvin H. Brooks. **38**: 694—1965
Voice reflector. Carolyn H. MacFarlane. **38**: 694—1965

News
Center for Research on Language and Language Behavior. **38**: 489—1965

9.2 Anatomy and Physiology of the Larynx and Vocal Tract

Abstracts
Analysis-synthesis of glottal excitation. Sheldon B. Michaels and William J. Strong. **38**: 935—1965
Model of larynx activity during phonation. Thomas H. Crystal. **38**: 934—1965

9.3 Acoustic Analysis of Speech

Papers
Examination of two different formant-estimation techniques. Gordon E. Peterson and John R. Hanne. **38**: 224—1965

Letters to the Editor
Some acoustic cues for synthesis of the /n-d/ distinction. J. M. Pickett. **38**: 474—1965
Technique for objective measurement of speech levels. Peter D. Bricker. **38**: 361—1965

Abstracts
Analysis-synthesis of glottal excitation. Sheldon B. Michaels and William J. Strong. **38**: 935—1965
Application of digital inverse filtering to the systematic variation of vowel parameters. John F. Hemdal. **38**: 935—1965
Certain acoustic correlates of vocal style. James Wesley Irwin, William H. Perkins, and Naoaki Yanagihara. **38**: 934—1965
Environmental influence on the speech of family members shown by spectrographic speech matching. L. G. Kersta. **38**: 935—1965
"On-line" computing in speech research. P. B. Denes. **38**: 934—1965
Real-time formant vocoder, using a filter bank, a general-purpose digital computer, and an analog synthesizer. Cecil H. Coker. **38**: 940—1965
Subjective evaluation of formant-coded vowel spectra regenerated with the aid of a channel-vocoder synthesizer. E. Paulus and E. H. Rothauser. **38**: 940—1965

9.4 Speech Synthesis

Papers
Techniques for speech bandwidth compression, using combinations of channel vocoders and formant vocoders. Bernard Gold. **38**: 2—1965

Letters to the Editor
Automation of sound transfer from a tape recorder to the Sonagraph. J. Frydman. **38**: 143—1965
Some acoustic cues for synthesis of the /n-d/ distinction. J. M. Pickett. **38**: 474—1965

Abstracts
Bionics approach to speech segmentation and synthesis. J. Ryland Mundie and William A. Fahle. **38**: 934—1965
Comparative performance evaluation of conventional, whispering, and monotone vocoder speech. William D. Voiers. **38**: 940—1965
Effects of multiple vocoderization on consonant intelligibility. Marion F. Cohen and William D. Voiers. **38**: 941—1965
Further developments in unit-variance scaling method. J. Mickunas, Jr. **38**: 941—1965
Hybrid encoding scheme for vocoders. Lawrence E. Cassel and D. L. Phyfe. **38**: 940—1965
Low-binary-data-rate operation of the formant vocoder. S. J. Campanella and D. C. Coulter. **38**: 942—1965
On line computer control of a formant synthesizer. Cecil H. Coker and P. Cummiskey. **38**: 940—1965
"On-line" computing in speech research. P. B. Denes. **38**: 934—1965
Phase vocoder. J. L. Flanagan, D. I. S. Meinhart, Roger M. Golden, and Man Mohan Sondhi. **38**: 939—1965
Real-time formant vocoder, using a filter bank, a general-purpose digital computer, and an analog synthesizer. Cecil H. Coker. **38**: 940—1965
Some effects of list familiarity and synthetic segment familiarity on the intelligibility of PB words produced by diphone synthesis. N. R. Dixon, H. D. Maxey, and R. Aylsworth. **38**: 941—1965
SPASS—an improved terminal-analog speech synthesizer. Raymond S. Tomlinson. **38**: 940—1965
Subjective evaluation of formant-coded vowel spectra regenerated with the aid of a channel-vocoder synthesizer. E. Paulus and E. H. Rothauser. **38**: 940—1965

Patents
Synthetic speech sound generator. Genung L. Clapper. **38**: 694—1965

9.5 **Perception of Speech and Speechlike Sounds. (See also 4.15.)**

Papers
Application of adaptive threshold elements to the recognition of acoustic-phonetic states. James E. Dammann. **38**: 213—1965
Distinctive features and errors in short-term memory for English vowels. Wayne A. Wickelgren. **38**: 583—1965
Stimulus-identification overlap in learning to identify complex sounds. Norman A. Sidley, Eugene Winograd, and Erwin W. Bedarf. **38**: 11—1965

Letters to the Editor
Everyday-speech intelligibility. J. C. Webster, Hallowell Davis, and W. Dixon Ward. **38**: 668—1965

Abstracts
Effect of high- and low-filtered noise on intelligibility of filtered speech. Sadanand Singh, Sonia P. Brokaw, and James E. Fricke. **38**: 923—1965
Temporal effects in talker identification. Peter D. Bricker and S. Pruzansky. **38**: 924—1965

9.6 **Measures of Speech Intelligibility, Quality, Information Content**

Papers
Release from masking for speech. Peter B. Weston, James D. Miller, and Ira J. Hirsh. **38**: 1053—1965
Re-vision of the speech-privacy calculation. Robert W. Young. **38**: 524—1965

Abstracts
Comparative performance evaluation of conventional, whispering, and monotone vocoder speech. William D. Voiers. **38**: 940—1965
Effect of high- and low-filtered noise on intelligibility of filtered speech. Sadanand Singh, Sonia P. Brokaw, and James E. Fricke. **38**: 923—1965
Effects of multiple vocoderization on consonant intelligibility, Marion F. Cohen and William D. Voiers. **38**: 941—1965
Further developments in unit-variance scaling method. J. Mickunas, Jr. **38**: 941—1965
Hybrid encoding scheme for vocoders. Lawrence E. Cassel and D. L. Phyfe. **38**: 940—1965
Listener judgments of motor-perceptual characteristics of bisyllable nonsense words. Donald J. Baker. **38**: 923—1965
New reference signal for speech-quality measurements. E. H. Rothauser and Günther E. Urbanek. **38**: 940—1965
Some effects of list familiarity and synthetic segment familiarity on the intelligibility of PB words produced by diphone synthesis. N. R. Dixon, H. D. Maxey, and R. Aylsworth. **38**: 941—1965
Temporal effects in talker identification. Peter D. Bricker and S. Pruzansky. **38**: 924—1965

9.7 **Phonetics, Linguistics, Statistics of Language**

Abstracts
Analysis of labial movement. Björn E. F. Lindblom and Henry I. Soron. **38**: 935—1965
Application of digital inverse filtering to the systematic variation of vowel parameters. John F. Hemdal. **38**: 935—1965
Certain acoustic correlates of vocal style. James Wesley Irwin, William H. Perkins, and Naoaki Yanagihara. **38**: 934—1965
Distributions of silent periods in speech: stutterers versus nonstutterers. Charles S. Watson and Laura R. Love. **38**: 935—1965
Environmental influence on the speech of family members shown by spectrographic speech matching. L. G. Kersta. **38**: 935—1965
Model of larynx activity during phonation. Thomas H. Crystal. **38**: 934—1965
Operational relation between the phonetic forms of elementary words. B. V. Bhimani and R. Mitchell. **38**: 934—1965

9.8 **Systems for Speech Transmission. Analysis-Synthesis Telephony, Speech Coding**

Papers
Examination of two different formant-estimation techniques. Gordon E. Peterson and John R. Hanne. **38**: 224—1965
Techniques for speech bandwidth compression, using combinations of channel vocoders and formant vocoders. Bernard Gold. **38**: 2—1965

Patents
Gas mask speech transmission. Arnold V. Motsinger. **38**: 694—1965
Sound recording and reproducing apparatus. Wolf Szmul Pajes. **38**: 694—1965
Underwater sound transmitter. James L. Laughlin and Delois R. Coplen. **38**: 518—1965
Voice inflection detection circuit. Genung L. Clapper. **38**: 908—1965

9.9 **Instruments for Speech Measurement**

Letters to the Editor
Technique for objective measurement of speech levels. Peter D. Bricker. **38**: 361—1965

9.10 **Machine Recognition of Speech**

Papers
Application of adaptive threshold elements to the recognition of acoustic-phonetic states. James E. Dammann. **38**: 213—1965
Computer recognition of spoken digits based on six nonacoustic measures. W. A. Hillix, M. N. Fry, and R. L. Hershman. **38**: 790—1965

Letters to the Editor
Some results in automatic speech segmentation using wide-band filtering and subtraction. D. Tufts, D. Mayhew, G. Dostie, and A. Smith. **38**: 362—1965

Abstracts
Bionics approach to speech segmentation and synthesis. J. Ryland Mundie and William A. Fahle. **38**: 934—1965

Patents
Acoustic apparatus. Herbert Belar and Harry F. Olson. **38**: 180—1965

10 ULTRASONICS

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Papers

Equivalent electrical network for the transversely vibrating uniform bar. Masashi Konno and Hisashi Nakamura. **38**: 614—1965

Abstracts

Distorted-wave interaction at boundaries. A. L. Van Buren and M. A. Breazeale. **38**: 931—1965

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News

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10.2 Physical Effects of Ultrasonic Waves. Optical Diffraction. Ultrasonic Processing

Papers

Chlorine-release test for cavitation-activity measurements. Shih-Ping Liu. **38**: 817—1965

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Inverse magnetostrictive effect of ultrasonic stress waves in steel. B. Langenecker. **38**: 234—1965

Wide-band modulation of a laser beam, using Bragg-angle diffraction by amplitude-modulated ultrasonic waves. Harold V. Hance and J. K. Parks. **38**: 14—1965

Letters to the Editor

Hypersonic absorption and velocity from measurement of light scattering: dichloromethane. G. R. Hanes, R. Turner, and J. E. Piercy. **38**: 1057—1965

Abstracts

In situ observation of insonated crystalline objects in the Siemens Elmiskop I. B. Langenecker. **38**: 927—1965

Optical studies of nonlinear interactions. Bill D. Cook. **38**: 927—1965

Ultrasonic temperature determinations in a shock tube. E. H. Carnevale, C. A. Carey, and S. J. Wolnik. **38**: 916—1965

10.3 Ultrasonic Instruments. (See also 5.18.)

Papers

Coupling between two modes of vibration in a piezoelectric resonator. M. Redwood. **38**: 576—1965

Equivalent circuits of solid horns undergoing longitudinal vibrations. A. Mohammed. **38**: 862—1965

Inverse magnetostrictive effect of ultrasonic stress waves in steel. B. Langenecker. **38**: 234—1965

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Letters to the Editor

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Patents

Apparatus for ultrasonic wall thickness measurements. Hendrik Bosselaar. **38**: 695—1965

Apparatus for wetting surfaces for ultrasonic testing. Ivan L. Joy. **38**: 181—1965

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Errata

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10.4 Gases, Ultrasonic Velocity, Dispersion, Absorption. (See also 11.3.)

Papers

Free-molecule propagation in rarefied gases. G. M. Sessler. **38**: 974—1965

Vibrational relaxation in carbon dioxide/water-vapor mixtures. James W. L. Lewis and K. P. Lee. **38**: 813—1965

Letters to the Editor

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Ultrasonic determination of viscosity and rotational collision number of high temperature. T. H. Carnevale, L. C. Lynnworth, and G. S. Larson. **38**: 916—1965

10.5 **Liquids, Ultrasonic Velocity, Dispersion, Absorption. (See also 13.2 and 13.3.)**

Papers

Anomalous absorption of pressure waves from explosions in sea water. H. W. Marsh, R. H. Mellen, and W. L. Konrad. **38**: 326—1965

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Temperature coefficients of relaxed and unrelaxed bulk moduli for pressure-induced relaxation processes. A. B. Bhatia. **38**: 668—1965

Ultrasonic absorption and velocity in concentrated aqueous sulfuric acid solutions. J. P. Valleau. **38**: 669—1965

Abstracts

Calculation of B/A for water from velocity vs. pressure and temperature measurements. M. Paul Hagelberg, Samuel Kao, and Gerald Holton. **38**: 927—1965

Measurement of propagation constants for shear waves in dilute macromolecular solutions. G. B. Thurston. **38**: 916—1965

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10.6 **Solids, Ultrasonic Velocity, Disperson, Absorption**

Papers

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Three experiments on diffraction from periodic surfaces. Emmanuel P. Papadakis. **38**: 987—1965

Ultrasonic determination of crystalline resonances and sound velocities, using NMR techniques. R. J. Mahler and W. H. Tanttila. **38**: 429—1965

Abstracts

Absolute-amplitude measurements of distorted ultrasonic waves in solids. W. B. Gauster and M. A. Breazeale. **38**: 927—1965

Behavior of finite-amplitude sound waves in nonlinear solids. Joseph Ford and Victor K. Paré. **38**: 926—1965

Determination of nonlinear properties from the velocity of small-amplitude waves in statically stressed crystals. R. N. Thurston. **38**: 926—1965

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Harmonic generation in solids effect of dislocations. C. Elbaum. **38**: 926—1965

In situ observation of insonated crystalline objects in the Siemens Elmiskop I. B. Langenecker. **38**: 927—1965

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Measurements of shear-wave attenuation in polycrystalline metals by means of guided waves in long strips. Allen H. Meitzler. **38**: 931—1965

Phonon–phonon interactions at ultrasonic frequencies. Fred R. Rollins, Jr. **38**: 926—1965

Ultrasonic internal conical refraction. Robert A. Artman. **38**: 931—1965

10.10 **Ultrasonic Relaxation Processes in Solids, Liquids, and Gases**

Papers

Ultrasonic absorption in $MgSO_4$ solutions as a function of pressure and dielectric constant. F. H. Fisher. **38**: 805—1965

Vibrational relaxation in carbon dioxide/water-vapor mixtures. James W. L. Lewis and K. P. Lee. **38**: 813—1965

Letters to the Editor

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Abstracts

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Ultrasonic determination of viscosity and rotational collision number of high temperature. E. H. Carnevale, L. C. Lynnworth, and G. S. Larson. **38**: 916—1965

11 **RADIATION AND SCATTERING**

11.1 **General, Unclassified**

Letters to the Editor

Soil compliance as a function of moisture and dry density. L. E. Johnson and Arthur F. Niemoeller. **38**: 882—1965

News
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11.1.5 **Analogies**

Papers
Equivalent electrical network for the transversely vibrating uniform bar. Masashi Konno and Hisashi Nakamura. **38**: 614—1965
Series solutions for structural mobility. V. H. Neubert. **38**: 867—1965

Letters to the Editor
Acoustic bridge for the measurement of liquid quantity. Thomas L. Ward. **38**: 1056—1965
Equivalent circuit of a tube or spring. B. B. Bauer. **38**: 882—1965
Predicting the effective dynamic coupling coefficient of the flextensional transducer (preliminary design considerations). L. H. Royster. **38**: 879—1965

Subtitles
Analogies. M. Redwood. **38**: 580—1965
Analogies. T. H. Rockwell. **38**: 626—1965

11.2 **Reflection, Refraction, Diffraction, and Interference of Sound Waves**

Papers
Acoustic field of a pulsed source in the underwater sound channel. Peter Hirsch. **38**: 1018—1965
Distortion of underwater acoustic signals reflected from a time and space random surface. R. A. D'Antonio and R. F. Hill. **38**: 715—1965
Elementary results for scattering by large ellipsoids. James E. Burke and Victor Twersky. **38**: 589—1965
Normal-mode intensity calculations for a constant-depth shallow-water channel. H. P. Bucker and Halcyon E. Morris. **38**: 1010—1965
Oscillatory acoustic transients radiated by impulsively accelerated bodies. M. C. Junger and William Thompson, Jr. **38**: 978—1965
Plane-wave scattering from a rough surface with correlated large- and small-scale orders of roughness. H. S. Hayre and D. E. Kaufman. **38**: 599—1965
Propagation and reflection of viscoelastic waves. Henry F. Cooper, Jr., and Edward L. Reiss. **38**: 24—1965
Reflections from lossy media. J. E. White. **38**: 604—1965
Scattering of a plane acoustical wave by a spherical obstacle. Donald S. Cohen and George H. Handelman. **38**: 837—1965
Sound-wave fluctuations in an environment of simulated random inhomogeneity. G. C. Knollman and J. J. Hartog. **38**: 72—1965
Studies of observed and predicted values of bottom reflectivity as a function of incident angle. F. R. Menotti, S. R. Santaniello, and W. R. Schumacher. **38**: 707—1965
Three experiments on diffraction from periodic surfaces. Emmanuel P. Papadakis. **38**: 987—1965
Transient scattering of a monochromatic acoustical wave by a scatterer fixed in space. V. R. Lauvstad. **38**: 35—1965
Transition régime for acoustic fluctuations in a randomly inhomogeneous medium. R. G. Stone and D. Mintzer. **38**: 843—1965

Letters to the Editor
Comments on "Approximation to the diffraction of sound by a circular aperture in a rigid wall of finite thickness" [G. P. Wilson and W. W. Soroka, J. Acoust. Soc. Am. **37**, 286–297 (1965)]. M. C. Gomperts. **38**: 877—1965
Nonlinear interaction of two sound beams. H. O. Berktay. **38**: 480—1965
Radiated field of a rectangular piston. Werner G. Neubauer. **38**: 671—1965
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Abstracts
Generalized scattering theory for one, two, and three dimensions. Mark Harrison. **38**: 932—1965
Ultrasonic internal conical refraction. Robert A. Artman. **38**: 931—1965

11.3 **Velocity and Attenuation of Sound Waves. (See also 10.4, 10.5, 10.6, 13.2, and 13.3.)**

Papers
Backward-wave transmission of stress pulses in elastic cylinders and plates. Allen H. Meitzler. **38**: 835—1965
Influence of shear flow on sound attenuation in a lined duct. D. H. Tack and R. F. Lambert. **38**: 655—1965
Reflections from lossy media. J. E. White. **38**: 604—1965
Transition régime for acoustic fluctuations in a randomly inhomogeneous medium. R. G. Stone and D. Mintzer. **38**: 843—1965

Abstracts
Free-molecule propagation and sound propagation in rarefied gases. G. M. Sessler. **38**: 932—1965
Transient solution for sound in a viscous fluid. David T. Blackstock. **38**: 931—1965

11.4 **Waves in Bounded Media**

Papers
Acoustic field of a pulsed source in the underwater sound channel. Peter Hirsch. **38**: 1018—1965
Backward-wave transmission of stress pulses in elastic cylinders and plates. Allen H. Meitzler. **38**: 835—1965
Equivalent circuits of solid horns undergoing longitudinal vibrations. A. Mohammed. **38**: 862—1965
Experiment on propagation in surface sound channels. A. C. Kibblewhite and R. N. Denham. **38**: 63—1965
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Three experiments on diffraction from periodic surfaces. Emmanuel P. Papadakis. **38**: 987—1965

Letters to the Editor
Comments on Fitzgerald resonances. I. L. Hopkins. **38**: 145—1965
Vibration of a gaseous medium in a parabolical cavity. C. K. Liu. **38**: 674—1965

Abstracts
Fourier-transform technique for measuring terminating impedances. Robert Plunkett and L. E. Wittig. **38**: 924—1965
Investigation of a method for attenuating plane waves in bars. Robert Plunkett and C. E. Hanson. **38**: 924—1965
Measurements of shear-wave attenuation in polycrystalline metals by means of guided waves in long strips. Allen H. Meitzler. **38**: 931—1965
New modifications and solutions of D. J. Korteweg's equations to determine accurately the sound speed in circular elastic-walled liquid columns. Charles J. Rivera. **38**: 931—1965
Propagation of transients in waveguides. A. B. Coppens. **38**: 931—1965

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11.5 **Radiation from Vibrating Objects in Air and Other Gases. Acoustic Impedance. Sources of Sound. (See also 5.3, 12.3z, and 13.7.)**

Papers
Nearfield pressure for a steered array of strips. Visvaldis Mangulis. **38**: 78—1965
Note on the virtual mass for a panel in an infinite baffle. A. J. Pretlove. **38**: 266—1965
Oscillatory acoustic transients radiated by impulsively accelerated bodies. M. C. Junger and William Thompson, Jr. **38**: 978—1965
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Letters to the Editor
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Nonlinear interaction of two sound beams. H. O. Berktay. **38**: 480—1965
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Abstracts
Reverberation-chamber measurements of the acoustic power of "frequency-varying" sources. George C. Maling, Jr., and Knut S. Nordby. **38**: 921—1965
Underwater steam sound source. Serge Wisotsky. **38**: 934—1965

11.6 **Wave Propagation in Tubes**

Papers
Backward-wave transmission of stress pulses in elastic cylinders and plates. Allen H. Meitzler. **38**: 835—1965
Influence of shear flow on sound attenuation in a lined duct. D. H. Tack and R. F. Lambert. **38**: 655—1965
Reflections from lossy media. J. E. White. **38**: 604—1965
Three experiments on diffraction from periodic surfaces. Emmanuel P. Papadakis. **38**: 987—1965

Letters to the Editor
Comments on "Approximation to the diffraction of sound by circular aperture in a rigid wall of finite thickness" [G. P. Wilson and W. W. Soroka, J. Acoust. Soc. Am. **37**, 286-297 (1965)]. M. C. Gomperts. **38**: 877—1965
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Abstracts
Dynamic response of thin elastic shells to internal fluid sources. G. M. Rentzepis and R. E. Jewell. **38**: 941—1965
New modifications and solutions of D. J. Korteweg's equations to determine accurately the sound speed in circular elastic-walled liquid columns. Charles J. Rivera. **38**: 931—1965

11.7 **Mathematical Theory of Wave Propagation. Ray Acoustics. (See also 11.1.5.)**

Papers
Acoustic field of a pulsed source in the underwater sound channel. Peter Hirsch. **38**: 1018—1965
Acoustic radiation from a thin torus, with application to the free-flooding ring transducer. Charles H. Sherman and N. G. Parke. **38**: 715—1965
Anomalous absorption of pressure waves from explosions in sea water. H. W. Marsh, R. H. Mellen, and W. L. Konrad. **38**: 326—1965
Deflection of a particle moving along an infinite string resting on an elastic foundation. E. V. Wilms and M. Stippes. **38**: 282—1965
Distortion of underwater acoustic signals reflected from a time and space random surface. R. A. D'Antonio and R. F. Hill. **38**: 701—1965
Elementary results for scattering by large ellipsoids. James E. Burke and Victor Twersky. **38**: 589—1965
Free-molecule propagation in rarefied gases. G. M. Sessler. **38**: 974—1965
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Propagation and reflection of viscoelastic waves. Henry F. Cooper, Jr., and Edward L. Reiss. **38**: 24—1965
Propagation of short-wavelength acoustic waves through an inhomogeneous medium. G. R. Barnard and K. McCormack. **38**: 287—1965

Ray acoustical model of the ocean using a depth/sound-speed profile with a continuous first derivative. Kenneth R. Stewart. **38**: 339—1965

Scattering of a plane acoustical wave by a spherical obstacle. Donald S. Cohen and George H. Handelman. **38**: 837—1965

Theory of focusing plane waves by spherical, liquid lenses. C. A. Boyles. **38**: 393—1965

Torsional waves in composite rods. Anthony E. Armenàkas. **38**: 439—1965

Transient scattering of a monochromatic acoustical wave by a scatterer fixed in space. V. R. Lauvstad. **38**: 35—1965

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Vibrational-energy transmission in a three-element structure. Richard H. Lyon and Terry D. Scharton. **38**: 253—1965

Letters to the Editor

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Radiated field of a rectangular piston. Werner G. Neubauer. **38**: 671—1965

Vibration of a gaseous medium in a parabolical cavity. C. K. Liu. **38**: 674—1965

Abstracts

Behavior of finite-amplitude sound waves in nonlinear solids. Joseph Ford and Victor K. Paré. **38**: 926—1965

Computation of farfield radiation patterns by use of a general integral solution to the time-dependent scalar wave equation. Horace G. Ferris. **38**: 933—1965

Determination of nonlinear properties from the velocity of small-amplitude waves in statically stressed crystals. R. N. Thurston. **38**: 926—1965

Fourier-transform technique for measuring terminating impedances. Robert Plunkett and L. E. Wittig. **38**: 924—1965

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Harmonic generation in solids effect of dislocations. C. Elbaum. **38**: 926—1965

Investigation of a method for attenuating plane waves in bars. Robert Plunkett and C. E. Hanson. **38**: 924—1965

Negative group velocities in semiinfinite plates. Peter J. Torvik and Robert Plunkett. **38**: 924—1965

New modifications and solutions of D. J. Korteweg's equations to determine accurately the sound speed in circular elastic-walled liquid columns. Charles J. Rivera. **38**: 931—1965

Propagation of transients in waveguides. A. B. Coppens. **38**: 931—1965

11.8 Physical Effects of Sound. (See also 12.11.)

Abstracts

Model study of panel response to boundary-layer pressure fluctuations. David Alan Bies. **38**: 926—1965

11.9 Sounds in the Atmosphere

Abstracts

Some effects of airplane operations and the atmosphere on sonic-boom signatures. Domenic J. Maglieri. **38**: 910—1965

Some effects of the nonuniform atmosphere on the propagation of sonic booms. E. J. Kane. **38**: 910—1965

12 MECHANICAL VIBRATIONS AND SHOCK. (See also 5., 11., and 16.)

12.1 General, Unclassified

Letters to the Editor

Comment on the existence of the Fitzgerald effect. R. W. Leonard. **38**: 673—1965

Comments on Fitzgerald resonances. I. L. Hopkins. **38**: 145—1965

News

Shock and Vibration Symposium. **38**: 886—1965

Standards notes. **38**: 151—1965

12.3 Instruments and Apparatus Relating to Vibration and Shock. (See also 5.3, 5.4, 5.9, 5.21.)

Papers

Mechanical-impedance characteristics at ends of a rockdrill rod. E. Carl H. Becker. **38**: 239—1965

12.3i Vibration Isolators, Attenuators, and Dampers. (See also 2.11 and 5.21.)

Papers

Investigation of structure-borne active vibration dampers. T. H. Rockwell. **38**: 623—1965

Letters to the Editor

Compensation technique for active damping improvement. J. M. Lawther and T. H. Rockwell. **38**: 481—1965

Abstracts

Designing an acoustic-isolation enclosure for a microwave echo box. John H. Putukian. **38**: 925—1965

Mechanism of vibratory-energy dissipation at joints in thin metal structures. Eric E. Ungar and Jaime R. Carbonell. **38**: 925—1965

Optimal shock isolator and absorber synthesis. Theodore Liber and Ralph L. Barnett. **38**: 915—1965

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Synthesis of simple shock isolator. Richard L. Fox. **38**: 914—1965

Patents
Damped air spring. Frederik G. van Zijp. **38**: 696—1965
Method of making a resilient mounting. Archie John Hirst. **38**: 696—1965
Resilient absorber on microphone stand. H. W. Harman. **38**: 697—1965
Safety razor having a vibration damping blade mounting member. Harry Beckman Randolph. **38**: 696—1965
Serially arranged vibration isolators with low natural frequency. James J. Kerley, Jr. **38**: 181—1965
Transducer for dissipation and detection of high frequency vibratory energy. Florence Nesh. **38**: 908—1965
Tuned absorber for vibratory drive. Robert M. Carrier, Jr., and John M. Morris. **38**: 696—1965
Vibration isolator arrangement to reduce stress concentration of cable. James J. Kerley, Jr. **38**: 181—1965

12.3p **Vibration Pickups and Indicators. Calibration Equipment and Techniques. (See also 5.9, 5.18, and 13.11t.)**

Letters to the Editor
Comment on the existence of the Fitzgerald effect. R. W. Leonard. **38**: 673—1965
Comments on Fitzgerald resonances. I. L. Hopkins. **38**: 145—1965

Patents
Acoustically supported motion sensor and method. Donald Luther Ensley. **38**: 391—1965
Vibration pickup means. Karl F. Frank. **38**: 697—1965

12.3v **Vibration Generators. Shake Tables. (see also 5.21.)**

Papers
Family of cylindrical velocity transformers; study by analog computer techniques. L. T. Russell and H. S. Heaps. **38**: 47—1965

Subtitles
Vibration generators. Shake tables. J. L. Bogdanoff and S. J. Citron. **38**: 449—1965

12.3z **Mechanical-Impedance Measurement. (See also 5.3 and 11.5.)**

Papers
Acoustic water tunnel. R. M. Fand. **38**: 561—1965

Letters to the Editor
Soil compliance as a function of moisture and dry density. L. E. Johnson and Arthur F. Niemoeller. **38**: 882—1965

12.5 **Shock. (See also 14.2 and 13.10.)**

Papers
Mechanical-impedance characteristics at ends of a rockdrill rod. E. Carl H. Becker. **38**: 239—1965

12.7 **Theory of Vibrating Systems. (See also 11.7 and 11.1.5.)**

Papers
Axially symmetric vibrations of a finite, isotropic cylinder. Ram Kumar. **38**: 851—1965
Axisymmetric vibrations of prolate spheroidal shells. P. J. Nemergut and R. S. Brand. **38**: 262—1965
Coupling between two modes of vibration in a piezoelectric resonator. M. Redwood. **38**: 576—1965
Deflection of a particle moving along an infinite string resting on an elastic foundation. E. V. Wilms and M. Stippes. **38**: 282—1965
Equivalent circuits of solid horns undergoing longitudinal vibrations. A. Mohammed. **38**: 862—1965
Equivalent electrical network for the transversely vibrating uniform bar. Masashi Konno and Hisashi Nakamura. **38**: 614—1965
Experiments with an inverted pendulum subject to random parametric excitation. J. L. Bogdanoff and S. J. Citron. **38**: 447—1965
Family of cylindrical velocity transformers; study by analog computer techniques. L. T. Russell and H. S. Heaps. **38**: 47—1965
Investigation of structure-borne active vibration dampers. T. H. Rockwell. **38**: 623—1965
Mean-square approximate systems and their application in estimating response in complex disordered linear systems. J. L. Bogdanoff. **38**: 244—1965
Mechanical-impedance characteristics at ends of a rockdrill rod. E. Carl H. Becker. **38**: 239—1965
Nonlinear character of resonance in stretched strings. G. S. Srinivasa Murthy and B. S. Ramakrishna. **38**: 461—1965
Note on the virtual mass for a panel in an infinite baffle. A. J. Pretlove. **38**: 266—1965
Relativistic perturbed oscillator. Han-Shou Liu. **38**: 1003—1965
Response of internally damped cantilever beams to sinusoidal vibration. J. C. Snowdon. **38**: 271—1965
Rotationally symmetric, transient response of a small-angle truncated conical shell owing to a moving pressure front. Joseph I. Bluhm and Donald Neal. **38**: 608—1965
Series solutions for structural mobility. V. H. Neubert. **38**: 867—1965
Stability of forced oscillations of a vibrating string. John W. Miles. **38**: 855—1965
Torsional waves in composite rods. Anthony E. Armenàkas. **38**: 439—1965
Transient vibration of thin elastic shells. H. Kraus and A. Kalnins. **38**: 994—1965
Vibrational-energy transmission in a three-element structure. Richard H. Lyon and Terry D. Scharton. **38**: 253—1965
Vibrations of transversely isotropic cylindrical shells of finite length. C. Prasad and R. K. Jain. **38**: 1006—1965

Letters to the Editor
Comments on "Axisymmetric vibrations of thin elastic shells" [C. N. DeSilva and G. E. Tersteeg, J. Acoust. Soc. Am. **36**, 666–672 (1964)]. William C. L. Hu. **38**: 365—1965
Compensation technique for active damping improvement. J. M. Lawther and T. H. Rockwell. **38**: 481—1965
Equations of motion of spherical shells. A. Jahanshahi. **38**: 883—1965
Natural frequencies of closed spherical shells. J. P. Wilkinson. **38**: 367—1965
Response to "Comments on 'Axisymmetric vibrations of thin elastic shells'" [W. C. L. Hu, J. Acoust. Soc. Am. **38**, 365–366(L) (1965)]. C. N. DeSilva and G. E. Tersteeg. **38**: 367—1965

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Abstracts

Acoustic properties of solids by the resonant-sphere technique. D. B. Fraser. **38**: 930—1965

Natural modes and frequencies of vertical vibration of a beam with an attached sprung mass. Ralph C. Leibowitz. **38**: 924—1965

Negative group velocities in semiinfinite plates. Peter J. Torvik and Robert Plunkett. **38**: 924—1965

Optimally synthesizable boundedness and stability of the limit domain for response of general lumped systems. J. M. Skowronski and R. W. Liu. **38**: 915—1965

Vibration of partially fixed beams carrying an arbitrary number of concentrated masses. Chintakindi L. Amba-Rao. **38**: 942—1965

12.10 Seismology. Geophysical Prospecting. Seismographs

Patents

Fathometer. Franklyn K. Levin. **38**: 1078—1965

Ultrasonic materials testing system. Edward G. Cook and William I. Shepley. **38**: 181—1965

12.11 Effect of Sound on Structures. Fatigue. (See also 11.8.)

Papers

Rotationally symmetric, transient response of a small-angle truncated conical shell owing to a moving pressure front. Joseph I. Bluhm and Donald Neal. **38**: 608—1965

Abstracts

Assessment of the sonic-boom problem for future air-transport vehicles. Donald D. Baals and Willard F. Foss, Jr. **38**: 914—1965

Dynamic response of thin elastic shells to internal fluid sources. G. M. Rentzepis and R. E. Jewell. **38**: 941—1965

Model study of panel response to boundary-layer pressure fluctuations. David Alan Bies. **38**: 926—1965

Multimode response of panels to sonic boom. Malcolm J. Crocker. **38**: 936—1965

Response of acoustic resonators to sonic booms. James D. Simpson and Richard L. Lowery. **38**: 936—1965

Response of a linear system to impulsive-noise forcing. Raymond A. Janssen and Talivaldis I. Smits. **38**: 925—1965

Response of buildings to sonic booms. Donald M. Weinroth. **38**: 914—1965

12.12 Random Vibration. (Started 1965.)

Papers

Experiments with an inverted pendulum subject to random parametric excitation. J. L. Bogdanoff and S. J. Citron. **38**: 447—1965

Mean-square approximate systems and their application in estimating response in complex disordered linear systems. J. L. Bogdanoff. **38**: 244—1965

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Power spectral density of the response of a nonlinear system to random excitation. Ghassan R. Khabbaz. **38**: 847—1965

Abstracts

Acoustical properties of a free-edge bender disk under radiation loading. D. S. Potter and M. W. McLennan. **38**: 925—1965

Prediction of system reliability under random loading. Talivaldis I. Smits and R. F. Lambert. **38**: 925—1965

Random-vibration testing with multiple exciters and control transducers. Allen J. Curtis and Henry T. Abstein. **38**: 925—1965

13 UNDERWATER SOUND

13.1 General, Unclassified

Letters to the Editor

Addendum: Spatial-correlation functions for various noise models [J. Acoust. Soc. Am. **34**, 1732–1736 (1962)]. Benjamin F. Cron and Charles H. Sherman. **38**: 885—1965

Reply to "Comments on 'Reception characteristics of a linear array in a random transmission medium'" [D. J. Bordelon, J. Acoust. Soc. Am. **37**, 387(L) (1965)]. Gary E. Lord and Stanley R. Murphy. **38**: 370—1965

Book Reviews

Underwater Acoustics Handbook II. Vernon M. Albers. (Reviewed by William S. Cramer.) **38**: 1073—1965

13.2 Propagation of Sound in Water. Attenuation. Fluctuation

Papers

Acoustic field of a pulsed source in the underwater sound channel. Peter Hirsch. **38**: 1018—1965

Anomalous absorption of pressure waves from explosions in sea water. H. W. Marsh, R. H. Mellen, and W. L. Konrad. **38**: 326—1965

Caustics and convergence zones in deep-water sound transmission. R. J. Urick. **38**: 348—1965

Covariance of surface-generated noise in a deep ocean. W. S. Liggett, Jr., and M. J. Jacobson. **38**: 303—1965

Deep-ocean sound attenuation in the sub- and low-kilocycle-per-second region. William H. Thorp. **38**: 648—1965

Experiment on propagation in surface sound channels. A. C. Kibblewhite and R. N. Denham. **38**: 63—1965

Harmonic distortion of spherical sound waves in water. Oliver H. McDaniel. **38**: 644—1965

Long-range sound-propagation study in the southern ocean—Project Neptune. A. C. Kibblewhite, R. N. Denham, and P. H. Barker. **38**: 629—1965

Marine sediment attenuation and ocean-bottom-reflected sound. B. F. Cole. **38**: 291—1965

Near-surface measurements of deep explosions. I. Pressure pulses from small charges. Maurice Blaik and Ermine A. Christian. **38**: 50—1965

Near-surface measurements of deep explosions. II. Energy spectra of small charges. Ermine A. Christian and Maurice Blaik. **38**: 57—1965

Normal-mode intensity calculations for a constant-depth shallow-water channel. H. P. Bucker and Halcyon E. Morris. **38**: 1010—1965
Propagation of short-wavelength acoustic waves through an inhomogeneous medium. G. R. Barnard and K. McCormack. **38**: 287—1965
Ray acoustical model of the ocean using a depth/sound-speed profile with a continuous first derivative. Kenneth R. Stewart. **38**: 339—1965
Sound-wave fluctuations in an environment of simulated random inhomogeneity. G. C. Knollman and J. J. Hartog. **38**: 72—1965

Letters to the Editor
Analysis of sea water from the tongue of the ocean. W. L. Konrad. **38**: 1061—1965
Possible effects of sea-surface or volume reverberations on low-frequency deep-water bottom-reveberation measurements. K. V. Mackenzie. **38**: 368—1965
Propagation of low-frequency CW sound signals in the deep ocean. Albert N. Guthrie and John D. Shaffer. **38**: 1060—1965

Abstracts
Attenuation of acoustic energy propagating in the ocean. K. Bakhru and A. Berman. **38**: 918—1965
Further data on low-frequency sound attenuation in the deep ocean. R. J. Urick. **38**: 918—1965
Investigation of the time autocorrelation of sonic pulses propagated in a medium of random temperature microstructure. S. J. Campanella. **38**: 942—1965
MIMI multipath measurements. T. G. Birdsall. **38**: 919—1965
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Separating and timing overlapping sofar signals. Miles Mayall and T. A. Graves. **38**: 919—1965
Spectra of large underwater explosions. G. R. Hamilton and Brian Patterson. **38**: 941—1965
Stability of CW acoustic signals, Straits of Florida. J. G. Clark, R. Dann, and R. Yarnall. **38**: 919—1965
System for the study of underwater acoustic propagation. M. Kronengold and J. Loewenstein. **38**: 918—1965
Underwater-acoustic-propagation measurements to 5000-foot depths. David C. Whitmarsh and William J. Leiss. **38**: 919—1965

Patents
Artificial sound channel. Robert A. Arnoldi. **38**: 697—1965

13.3 Velocity of Sound in Water. Refraction. Doppler Effect

Papers
Caustics and convergence zones in deep-water sound transmission. R. J. Urick. **38**: 348—1965
Experiment on propagation in surface sound channels. A. C. Kibblewhite and R. N. Denham. **38**: 63—1965
Influence of relative changes in magnesium and sulfate content upon the sound velocity of sea water. Norman W. Lord, Morris A. Ransone, and Mary E. Brey. **38**: 313—1965
Long-range sound-propagation study in the southern ocean—Project Neptune. A. C. Kibblewhite, R. N. Denham, and P. H. Barker. **38**: 629—1965
Propagation of short-wavelength acoustic waves through an inhomogeneous medium. G. R. Barnard and K. McCormack. **38**: 287—1965
Theory of focusing plane waves by spherical, liquid lenses. C. A. Boyles. **38**: 393—1965

Letters to the Editor
Analysis of the sea water from the tongue of the ocean. W. L. Konrad. **38**: 1061—1965

Abstracts
Autocovariance spectrum of sound-velocity microstructure in deep Caribbean water. Norman W. Lord. **38**: 919—1965
Investigation of the time autocorrelation of sonic pulses propagated in a medium of random temperature microstructure. S. J. Campanella. **38**: 942—1965
New modifications and solutions of D. J. Korteweg's equations to determine accurately the sound speed in circular elastic-walled liquid columns. Charles J. Rivera. **38**: 931—1965

Patents
Velocity of sound meter. Fred J. Suellentrop, Alvin E. Brown, and Eric Rule. **38**: 1078—1965

13.4 Reflection. Echoes. Structures for Absorbing Sound in Water

Papers
Distortion of underwater acoustic signals reflected from a time and space random surface. R. A. D'Antonio and R. F. Hill. **38**: 701—1965
Marine sediment attenuation and ocean-bottom-reflected sound. B. F. Cole. **38**: 291—1965
Plane-wave scattering from a rough surface with correlated large- and small-scale orders of roughness. H. S. Hayre and D. E. Kaufman. **38**: 599—1965
Studies of observed and predicted values of bottom reflectivity as a function of incident angle. F. R. Menotti, S. R. Santaniello, and W. R. Schumacher. **38**: 707—1965

Letters to the Editor
Method for the reduction of the harmonic content of high-intensity acoustic pulses. Oliver H. McDaniel and Janies H. Prout. **38**: 1062—1965
Possible effects of sea-surface or volume reverberations on low-frequency deep-water bottom-reverberation measurements. K. V. Mackenzie. **38**: 368—1965
Statistics of sound multipaths. J. J. Martin. **38**: 1061—1965

Abstracts
Cavitation caused by explosive shock pulses reflected from the sea surface. R. P. Chapman and H. D. Scott. **38**: 933—1965
Pulse distortion in the underwater sound channel. Peter Hirsch. **38**: 919—1965
Reflection of explosive pulses from a general layered sea floor. O. F. Hastrup. **38**: 933—1965

Subtitles
Structures for absorbing sound in water. R. M. Fand. **38**: 565—1965

13.5 Interference. Diffraction

Papers

Distortion of underwater acoustic signals reflected from a time and space random surface. R. A. D'Antonio and R. F. Hill. **38**: 701—1965

Theory of focusing plane waves by spherical, liquid lenses. C. A. Boyles. **38**: 393—1965

Letters to the Editor

Propagation of low-frequency CW sound signals in the deep ocean. Albert N. Guthrie and John D. Shaffer. **38**: 1060—1965

Abstracts

Pulsed creeping waves in acoustics. H. Überall, R. D. Doolittle, and J. V. McNicholas. **38**: 933—1965

13.6 Scattering. Reverberation in Water

Papers

Distortion of underwater acoustic signals reflected from a time and space random surface. R. A. D'Antonio and R. F. Hill. **38**: 715—1965

Plane-wave scattering from a rough surface with correlated large- and small-scale orders of roughness. H. S. Hayre and D. E. Kaufman. **38**: 599—1965

Sound-wave fluctuations in an environment of simulated random inhomogeneity. G. C. Knollman and J. J. Hartog. **38**: 72—1965

Studies of observed and predicted values of bottom reflectivity as a function of incident angle. F. R. Menotti, S. R. Santaniello, and W. R. Schumacher. **38**: 707—1965

Letters to the Editor

Possible effects of sea-surface or volume reverberations on low-frequency deep-water bottom-reverberation measurements. K. V. Mackenzie. **38**: 368—1965

Statistics of sound multipaths. J. J. Martin. **38**: 1061—1965

Abstracts

Acoustic interaction effects in arrays of small spheres. D. E. Weston. **38**: 933—1965

Generalized scattering theory for one, two, and three dimensions. Mark Harrison. **38**: 932—1965

Monostatic scattering from the ocean volume. Kenneth D. Flowers and Burton G. Hurdle. **38**: 932—1965

Pulsed creeping waves in acoustics. H. Überall, R. D. Doolittle, and J. V. McNicholas. **38**: 933—1965

Scattered fields from the ocean bottom. K. P. Thompson, Kenneth D. Flowers, and Burton G. Hurdle. **38**: 932—1965

Volume-scattering measurements at 12 kc/sec in the Western Pacific. W. E. Batzler and R. J. Vent. **38**: 932—1965

13.7 Radiation from Objects Vibrating under Water. Acoustical and Mechanical Impedance. (See also 5.3, 11.5, and 12.3z.)

Papers

Acoustic radiation from a thin torus, with application to the free-flooding ring transducer. Charles H. Sherman and N. G. Parke. **38**: 715—1965

Nearfield pressure for a steered array of strips. Visvaldis Mangulis. **38**: 78—1965

Studies of observed and predicted values of bottom reflectivity as a function of incident angle. F. R. Menotti, S. R. Santaniello, and W. R. Schumacher. **38**: 707—1965

Letters to the Editor

Method for the reduction of the harmonic content of high-intensity acoustic pulses. Oliver H. McDaniel and Janies H. Prout. **38**: 1062—1965

13.8 Sound Generation by Liquid Motion, Bubbles, Turbulence, Splashes. (See also 13.12.)

Papers

Covariance of surface-generated noise in a deep ocean. W. S. Liggett, Jr., and M. J. Jacobson. **38**: 303—1965

13.9 Noise in Water, Ship Noise. Flow Noise, Biological Noises

Papers

Covariance of surface-generated noise in a deep ocean. W. S. Liggett, Jr., and M. J. Jacobson. **38**: 303—1965

Experimental hydrophone-size correction factor for boundary-layer pressure fluctuations. Richard B. Gilchrist and Wayne A. Strawderman. **38**: 298—1965

Temperature- and wind-dependent ambient noise under midwinter pack ice. J. H. Ganton and A. R. Milne. **38**: 406—1965

Letters to the Editor

Addendum: Spatial-correlation functions for various noise models [J. Acoust. Soc. Am. **34**, 1732-1736 (1962)]. Benjamin F. Cron and Charles H. Sherman. **38**: 885—1965

Correlation of ambient noise in the ocean. Elizabeth M. Arase and T. Arase. **38**: 146—1965

Abstracts

Ambient-sea-noise correlation. Elizabeth M. Arase and T. Arase. **38**: 920—1965

Patents

Hydrodynamic noise reduction. Murray H. Silverman. **38**: 182—1965

13.10 Underwater Macrosonics. Explosions. Distortion. (See also 14.2 and 12.5.)

Papers

Acoustic field of a pulsed source in the underwater sound channel. Peter Hirsch. **38**: 1018—1965

Acoustic water tunnel. R. M. Fand. **38**: 561—1965

Anomalous absorption of pressure waves from explosions in sea water. H. W. Marsh, R. H. Mellen, and W. L. Konrad. **38**: 326—1965

Harmonic distortion of spherical sound waves in water. Oliver H. McDaniel. **38**: 644—1965

Long-range sound-propagation study in the southern ocean—Project Neptune. A. C. Kibblewhite, R. N. Denham, and P. H. Barker. **38**: 629—1965

Near-surface measurements of deep explosions. I. Pressure pulses from small charges. Maurice Blaik and Ermine A. Christian. **38**: 50—1965

Near-surface measurements of deep explosions. II. Energy spectra of small charges. Ermine A. Christian and Maurice Blaik. **38**: 57—1965

Parameter of nonlinearity in fluids. II. A. B. Coppens, Robert T. Beyer, M. B. Seiden, James Donohue, Frans Guepin, Richard H. Hodson, and Charles Townsend. **38**: 797—1965

Letters to the Editor

Method for the reduction of the harmonic content of high-intensity acoustic pulses. Oliver M. McDaniel and Janies H. Prout. **38**: 1062—1965

Abstracts

Calculation of B/A for water from velocity vs. pressure and temperature measurements. M. Paul Hagelberg, Samuel Kao, and Gerald Holton. **38**: 927—1965

Cavitation caused by explosive shock pulses reflected from the sea surface. R. P. Chapman and H. D. Scott. **38**: 933—1965

Reflection of explosive pulses from a general layered sea floor. O. F. Hastrup. **38**: 933—1965

Spectra of large underwater explosions. G. R. Hamilton and Brian Patterson. **38**: 941—1965

Underwater steam sound source. Serge Wisotsky. **38**: 934—1965

Use of inertial-type variable-reluctance transducers in underwater telephony. G. J. Sebesta, A. J. Mellen, and R. W. Carlisle. **38**: 933—1965

13.11 **Instruments Relating to Underwater Sound**

Letters to the Editor

Predicting the effective dynamic coupling coefficient of the flextensional transducer (preliminary design considerations). L. H. Royster. **38**: 879—1965

Patents

Electrical sound simulator. Lloyd D. Anderson. **38**: 1079—1965

Fish herder. John L. Wyatt. **38**: 697—1965

Method of measuring the velocity of an underwater moving sound source. Herman E. Ellingson and John C. Munson. **38**: 1079—1965

Sonic fish lure. Herman Teeter. **38**: 518—1965

Submarine simulator. Otto Christopher Niederer. **38**: 908—1965

13.11n **Navigational Instruments Using Underwater Sound. Underwater-Listening and Echo-Ranging Devices. Sonar**

Papers

Detection of random acoustic signals by receivers with distributed elements: optimum receiver structures for normal signal and noise fields. David Middleton and Herbert L. Groginsky. **38**: 727—1965

Abstracts

MIMI multipath measurements. T. G. Birdsall. **38**: 919—1965

Stability of CW acoustic signals, Straits of Florida. J. G. Clark, R. Dann, and R. Yarnall. **38**: 919—1965

Patents

Acoustic distance measuring equipment. Lauro Clement Ricalzone. **38**: 1079—1965

Acoustic system. Bernard W. Abrams. **38**: 391—1965

Ambiguity diagram for linear FM sonar. Donato M. Russo and Charles L. Bartberger. **38**: 183—1965

Automatic target signal tracker. John C. Munson. **38**: 182—1965

Continuous wave acoustic guidance system. William H. Hamilton and Arthur Nelkin. **38**: 908—1965

Depth ahead adapter for sonar systems. Donald D. Grieg. **38**: 698—1965

Distance measuring device. Donald D. Grieg. **38**: 697—1965

Echo sounding. Roy William George Haslett. **38**: 518—1965

Electronic acoustic receiver. Gerald F. Dulin. **38**: 698—1965

Electronic radiation systems. Charles W. Wilkinson. **38**: 698—1965

Electronic signal storage and display system. Donald E. Jackson and George Rand. **38**: 698—1965

Screw noise simulation technique. Samuel Grodzinsky and Myron N. Kaufman. **38**: 391—1965

Sonar simulator. William R. Kling. **38**: 518—1965

Sonobuoy simulator. Robert R. Fontaine. **38**: 391—1965

Underwater locating apparatus. John W. Dudley. **38**: 182—1965

Underwater platform. Peter L. Balise, Jr. **38**: 182—1965

Underwater telephone system. William F. Gordon. **38**: 908—1965

Underwater telephony. John T. Kroenert. **38**: 391—1965

Underwater telephony. Walter N. Wainwright. **38**: 908—1965

13.11t **Transducers for Underwater Sound. Transducer Calibration. (See also 5.18.)**

Papers

Acoustic radiation from a thin torus, with application to the free-flooding ring transducer. Charles H. Sherman and N. G. Parke. **38**: 715—1965

Experimental hydrophone-size correction factor for boundary-layer pressure fluctuations. Richard B. Gilchrist and Wayne A. Strawderman. **38**: 298—1965

Minor-lobe level as a function of tolerance on variations in individual-element sensitivity in four-element line arrays. Daniel F. Suchman. **38**: 723—1965

Nearfield pressure for a steered array of strips. Visvaldis Mangulis. **38**: 78—1965

Theory of focusing plane waves by spherical, liquid lenses. C. A. Boyles. **38**: 393—1965

Underwater sound transducer with a conical-shell radiation pattern. D. R. Sanders. **38**: 412—1965

Letters to the Editor

Propagation of low-frequency CW sound signals in the deep ocean. Albert N. Guthrie and John D. Shaffer. **38**: 1060—1965

Patents

Free piston fluid pressure transducer. Chester A. Clark. **38**: 909—1965

Hydrophone. William W. Horsman, William B. Huckabay, and William H. Parker. **38**: 699—1965

Interleaved electroacoustical transducer. Charles E. Green. **38**: 1079—1965

Internal rotary valve-fluid pressure transducer. Chester A. Clark. **38**: 909—1965

Magnetostrictive flexural-mode electromechanical transducer. Ralph S. Woollett. **38**: 698—1965
Magnetostrictive transducer. Carroll L. Key, Jr., Donald T. Laird, and James M. Lawther. **38**: 182—1965
Method for making a transducer. Forrest E. Coyle. **38**: 392—1965
Mosaic construction for electroacoustical cylindrical transducer. Charles E. Green. **38**: 698—1965
Phase multiplier transducer array. John J. Yagelowich. **38**: 519—1965
Piezoelectric assembly. Winfield James Trott and William E. Radford. **38**: 909—1965
Radiation level indicator for sonar projectors. Ronald A. Darby, Frank P. Hodges, and William L. Letsch. **38**: 519—1965

13.12 Acoustic Cavitation

Papers
Chlorine-release test for cavitation-activity measurements. Shih-Ping Liu. **38**: 817—1965
Nearfield pressure for a steered array of strips. Visvaldis Mangulis. **38**: 78—1965

Abstracts
Acoustic implications of persistent microbubble model. M. D. Kaizen and W. R. Turner. **38**: 916—1965
Cavitation caused by explosive shock pulses reflected from the sea surface. R. P. Chapman and H. D. Scott. **38**: 933—1965

14 AEROACOUSTICS, MACROSONICS

14.2 Macrosonic Propagation. Distortion of the Wavefront. Shock Waves. Blast Waves. Supersonic Boom

Papers
Anomalous absorption of pressure waves from explosions in sea water. H. W. Marsh, R. H. Mellen, and W. L. Konrad. **38**: 326—1965
Near-surface measurements of deep explosions. I. Pressure pulses from small charges. Maurice Blaik and Ermine A. Christian. **38**: 50—1965
Near-surface measurements of deep explosions. II. Energy spectra of small charges. Ermine A. Christian and Maurice Blaik. **38**: 57—1965

Abstracts
Assessment of the sonic-boom problem for future air-transport vehicles. Donald D. Baals and Willard F. Foss, Jr. **38**: 914—1965
Behavior of finite-amplitude sound waves in nonlinear solids. Joseph Ford and Victor K. Paré. **38**: 926—1965
Design methods for minimization of sonic-boom pressure-field disturbances. F. Edward McLean and Barrett L. Shrout. **38**: 910—1965
Distorted-wave interaction at boundaries. A. L. Van Buren and M. A. Breazeale. **38**: 931—1965
Effects of sonic boom on people: review and outlook. Henning E. von Gierke. **38**: 913—1965
Effects of sonic boom on people: St. Louis, Missouri 1961–1962. Charles W. Nixon. **38**: 913—1965
Experience in the United Kingdom on the effects of sonic bangs. C. H. E. Warren. **38**: 914—1965
Finite-amplitude distortion in air at high acoustic pressures. Stephan H. Burns. **38**: 927—1965
Harmonic generation in solids effect of dislocations. C. Elbaum. **38**: 926—1965
Instrumentation and techniques for measurement of sonic-boom signatures. David A. Hilton and James W. Newman, Jr. **38**: 910—1965
Laboratory tests of physiological–psychological reactions to sonic booms. K. D. Kryter. **38**: 914—1965
Multimode response of panels to sonic boom. Malcolm J. Crocker. **38**: 936—1965
Nature of the sonic-boom problem. Harvey H. Hubbard. **38**: 910—1965
Response of acoustic resonators to sonic booms. James D. Simpson and Richard L. Lowery. **38**: 936—1965
Response of buildings to sonic booms. Donald M. Weinroth. **38**: 914—1965
Shock-tube techniques for pressure calibration of microphones. H. E. Dahlke, D. A. Robinson, and John J. Van Houten. **38**: 937—1965
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14.3 Gross Movement of Matter by Sound Waves. Acoustic Streaming

Letters to the Editor
Comments on "Influence of sound upon local heat transfer from a cylinder" [P. D. Richardson, J. Acoust. Soc. Am. **36**, 2323–2327 (1964)]. R. M. Fand. **38**: 370—1965

14.5 Interaction of Sound with Sound

Letters to the Editor
Nonlinear interaction of two sound beams. H. O. Berktay. **38**: 480—1965

Abstracts
Phonon–phonon interactions at ultrasonic frequencies. Fred R. Rollins, Jr. **38**: 926—1965

14.6 Interaction of Fluid Motion and Sound

Papers
Influence of shear flow on sound attenuation in a lined duct. D. H. Tack and R. F. Lambert. **38**: 655—1965

Letters to the Editor
Refraction of injected sound by a very cold nitrogen jet. E. Grande. **38**: 1063—1965

14.7 Generation of Sound by Fluid Flow

Letters to the Editor

Noise from impinging, two-dimensional, underexpanded jet flows. William J. Sheeran and Darshan S. Dosanjh. **38**: 482—1965

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Abstracts

Acoustic losses from model rocket chambers. R. Slates, F. Buffum, G. Dehority, and E. Price. **38**: 921—1965

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Experimental noise studies of inlet guide vane–rotor–stator interactions for a single-stage axial-flow compressor. J. L. Crigler and W. L. Copeland. **38**: 920—1965

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Instrumentation and techniques for measurement of sonic-boom signatures. David A. Hilton and James W. Newman, Jr. **38**: 910—1965

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Sonic-boom pressure-field estimation techniques. Harry W. Carlson, Robert J. Mack, and Odell A. Morris. **38**: 910—1965

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Errata

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14.8 Aerothermoacoustics

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Modulated combustion (Dragon) loudspeaker. James S. Arnold. **38**: 416—1965

Letters to the Editor

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15 ACOUSTIC SIGNAL PROCESSING

15.1 General, Unclassified

Papers

Continuity effects with alternately sounded noise and tone signals as a function of manner of presentation. Lloyd Elfner and William E. Caskey. **38**: 543—1965

Measurement of auditory thresholds. A. E. Brown. **38**: 86—1965

Reaction-time distributions in the detection of weak signals in noise. Edward C. Carterette, Morton P. Friedman, and Robert Cosmides. **38**: 531—1965

Abstracts

Capacity of the acoustic channel as a medium for communication. R. O. Rowlands and F. G. Quinn. **38**: 912—1965

MIMI multipath measurements. T. G. Birdsall. **38**: 919—1965

Stability of CW acoustic signals, Straits of Florida. J. G. Clark, R. Dann, and R. Yarnall. **38**: 919—1965

15.2 Statistical Theory of Signals

Papers

Ambiguity Diagram for linear FM sonar. Donato M. Russo and Charles L. Bartberger. **38**: 183—1965

Nonstationary excitation and response in linear systems treated as sequences of random pulses. Y. K. Lin. **38**: 453—1965

Letters to the Editor

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Space–time correlation in isotropic noise fields. Theron Usher, Jr. **38**: 148—1965

Abstracts

Amplitude learning in the sequential-clipper cross-correlator detection receiver. Christopher V. Kimball. **38**: 911—1965

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Detection theory: uncertain signal-arrival times. L. W. Nolte. **38**: 911—1965

Digital spectral analysis of audio signals. K. L. Doty. **38**: 911—1965

New calculation methods for echo-ranging ambiguity. D. E. Weston. **38**: 912—1965

New method for the rapid determination of speech frequencies. Gordon R. Partridge. **38**: 911—1965

Propagation of acoustic energy in a time-varying inhomogeneous medium. K. Bakhru and A. Berman. **38**: 919—1965

Separating and timing overlapping sofar signals. Miles Mayall and T. A. Graves. **38**: 919—1965

Sic transit sonitus. F. V. Hunt. **38**: 911—1965
Underwater-acoustic-propagation measurements to 5000-foot depths. David C. Whitmarsh and William J. Leiss. **38**: 919—1965

15.3 Space–Time Processing Methods. Automatic Recognition

Papers
Detection of random acoustic signals by receivers with distributed elements: optimum receiver structures for normal signal and noise fields. David Middleton and Herbert L. Groginsky. **38**: 727—1965

Letters to the Editor
Automation of sound transfer from a tape recorder to the Sonagraph. J. Frydman. **38**: 143—1965

Abstracts
Ambient-sea-noise correlation. Elizabeth M. Arase and T. Arase. **38**: 920—1965
Sic transit sonitus. F. V. Hunt. **38**: 911—1965

15.4 Displays and Sensory Pattern Recognition. Learning Machines

Papers
Real-time electronic spectrograph for analysis of acoustic transients. J. F. Germano, R. Halley, and W. B. Allen. **38**: 1031—1965

Abstracts
New method for the rapid determination of speech frequencies. Gordon R. Partridge. **38**: 911—1965

15.5 Instrumentation

Patents
Electronic apparatus for the observation of signals of biological origin. Jorge Oltvani Pantle. **38**: 182—1965
Signal correlation method and means. Clarence S. Clay, Jr. **38**: 519—1965
Variable-delay, rotating, signal-delay and time compression device. Howard Schimmel and Clarence S. Clay, Jr. **38**: 519—1965

16 BIOACOUSTICS

16.2 Acoustic Characteristics of Biological Materials. Tissues. Microstructures from Macromolecular Species to Cellular Level

Papers
Ultrasonic absorption in aqueous solutions of high-molecular-weight polysaccharides. S. A. Hawley, L. W. Kessler, and Floyd Dunn. **38**: 521—1965

Errata
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16.3 Acoustic Measurement Methods in Biological Systems and Media

Papers
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Letters to the Editor
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16.8 Medical Diagnosis with Acoustics

Patents
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